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ABSTRACT

This Outdoor Cookery manual provides information and instruction on the basic outdoor skills of building suitable cooking fires, handling fires safely, and storing food. The necessity of having the right kind of fire is stressed (high flames for boiling, low for stewing, and coals for frying and broiling). Tips on gauging temperature, what types of wood to use and how to build different fires are given. Modern cooking devices (coffee pots, portable stoves, etc.) are discussed, as well as improvised devices (tin can stoves and reflector ovens) and non-utensil cooking using sticks, stones, strings, and bare coals. Fourteen recipes are included using foil to keep the food in and the ashes out. Menu planning with regard to convenience of preparation, weight, cost, spoilage concerns, estimation of amounts needed and nutritional value is emphasized, and includes checklists for utensils, camp equipment, cleaning supplies, food and paper products. Over 40 recipes for desserts, drinks, main dishes, baked goods, and snacks are given. The last section is devoted to record-keeping (with sample forms), metric conversion tables, and four references. (JMM)

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Outdoor Cooking
WP 473-83

PUBLISHED BY

ALBERTA AGRICULTURE

This Manual is produced for 4-H members and leaders enrolled in the 4-H program and administered by:

The British Columbia Department of Agriculture
4-H Clubs' Branch

Alberta Agriculture
4-H Branch

The University of Saskatchewan
Extension Division

The Manitoba Department of Agriculture
4-H and Youth Section, Community and Family Programs Branch

4-H MOTTO

Learn to do by doing.

4-H PLEDGE

I pledge
My HEAD to clearer thinking,
My HEART to greater loyalty,
My HANDS to larger service,
My HEALTH to better living,
For my club, my community, and my country.

4-H GRACE

(Tune of Auld Lang Syne)

We thank thee, Lord, for blessings great
On this, our own fair land.
Teach us to serve thee joyfully,
With head, heart, health, and hand.

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INTRODUCTION

Cooking on an open fire involves much more than the actual preparation of food. You must know the basic outdoor skills of building suitable cooking fires, handling fires safely, storing food, and other practices stressed in the Outdoorsman Project.

In this Outdoor Cookery Manual you will learn more specifically about fires for cooking, utensils, foil cookery, menu planning, and recipes for non-utensil cookery. The outdoors-wilderness experience is stressed.

Good luck and good eating!

ACHIEVEMENT DAY REQUIREMENTS

1. Demonstrate cookery at a meeting or special parents' night during the year, or at the Achievement Day.

2. Cook and serve a meal outdoors. For this meal, complete the evaluation sheet at the back of the Outdoor Cookery Manual and include:

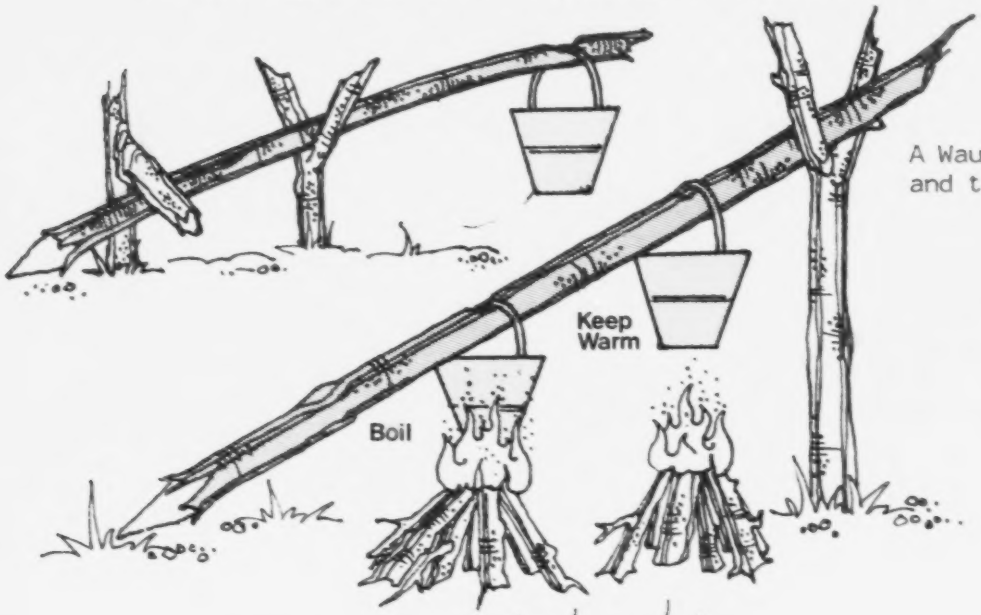
    a) menu plan
    b) cost of ingredients
    c) type of fire and equipment used
    d) overall success of meal

3. Make one piece of camping equipment such as a food bag, a special piece of cooking equipment, or a tableware roll and display it at Achievement Day.

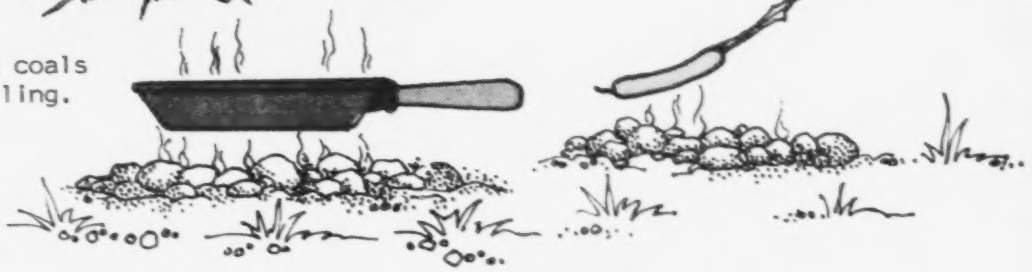
4. Complete record book.

FIRES FOR OUTDOOR COOKING

It is necessary to have exactly the right kind of fire ready for the job on hand when you start cooking -- high flames for boiling, low flames for stewing, a bed of glowing coals for frying and broiling.



A Waugan stick
and tee-pee fire.



You need coals
for broiling.

A common error is to build too big a fire for cooking. Experienced cooks take out unburned wood before starting to cook and use only the hot coals. Amateurs usually add more wood and so have a live blazing fire for cooking. Build a small fire for cooking, using long-lasting coals. If cooking is to be a long and drawn out process, build another fire a short distance away. Glowing coals can be borrowed as they are needed to replenish the cooking fire. Remember ... the most important factor in outdoor cooking is PATIENCE!

COOKING TEMPERATURES

You can come to determine correct temperatures by learning the trick of counting seconds while holding your palm in front of the fire. Hold your palm at the place where the food will go. Count "one-and-one", "two-and-two", etc. A slow fire is 6 to 8; medium 4 to 5; hot 2 to 3; very hot 1.

6 - 8 counts	SLOW FIRE	120°C - 165°C
4 - 5 counts	MEDIUM FIRE	160°C - 200°C
2 - 3 counts	HOT FIRE	200°C - 260°C
1 count	VERY HOT FIRE	over 260°C

NOTE: Never leave a fire unattended and be sure to have a pail of water and a shovel handy to put out a fire in case of emergency.

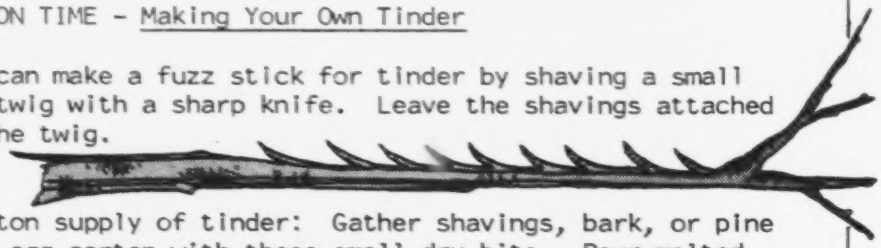
TYPES OF WOOD

TINDER

Before starting your cooking, you should gather enough wood to start your fire and complete your cooking. You need to collect tinder to start the fire. Tinder is smaller than your little finger and includes dry grass and leaves, dry pine needles, small twigs, shavings, and bark.

ACTION TIME - Making Your Own Tinder

You can make a fuzz stick for tinder by shaving a small dry twig with a sharp knife. Leave the shavings attached to the twig.



OR, Make an egg carton supply of tinder: Gather shavings, bark, or pine needles and fill an egg carton with these small dry bits. Pour melted paraffin over the carton. Insert a wick and allow the paraffin to solidify. To light your fire break off one section of the carton, light the wick, and ignite the larger pieces of kindling.

KINDLING

Kindling is larger than tinder - up to the diameter of your wrist - and is used to feed the fire until the larger logs ignite.

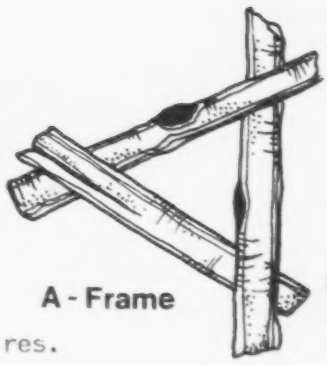
FUEL

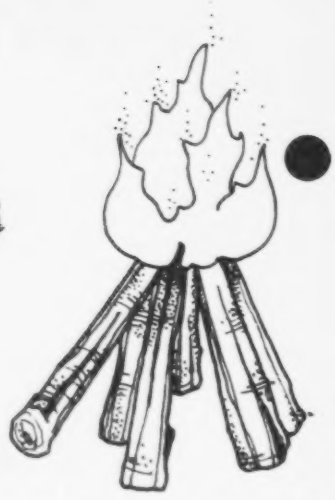
For fuel you need the largest logs to keep the fire burning for a long time.

TYPES OF COOKING FIRES

WIGWAM OR TEE-PEE FIRE

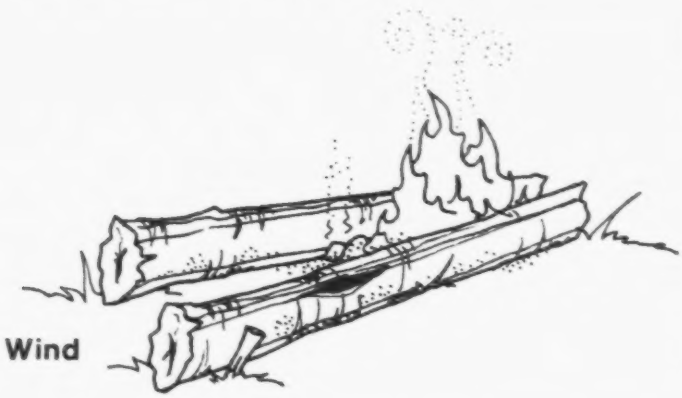
This fire is the basis for starting other fires, and is a quick burning, cheerful fire. Arrange three logs in an A-frame flat on the ground. Then build a tall, loose pyramid or tee-pee of tinder and kindling; leave plenty of air spaces between the sticks. It should be kept small - 15 centimetres or less - when used to start the other fires.





HUNTER TRAPPER FIRE

This is one of the most thoroughly satisfactory cooking fires. It uses two green logs or water-soaked logs of slow burning wood which are laid on a slant so that they are just far enough apart to support a small cooking pan at one end, and widen to about 40-45 centimetres at the other end. Care should be taken that the wide end faces the wind. A small wigwam fire is built between the logs, and the coals are distributed along under the cooking vessels. Anchor the logs in place by putting them in a shallow trench or by pegging them down. Sticks of green wood may be laid across the logs to support the utensils if desired.



The logs act as relectors and throw the heat up under the pans. Green stock dampers under the logs provide better ventilation when the fire is getting started.

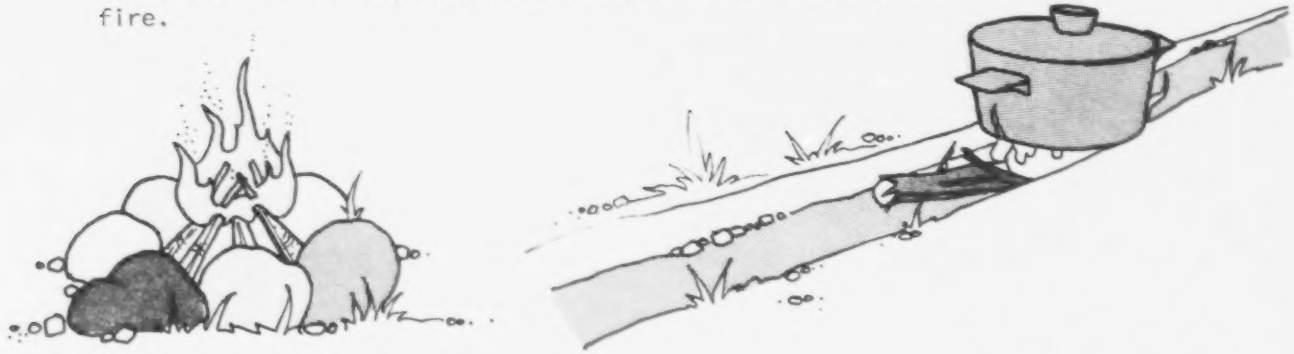
a) Stone Hunter Trapper Fire

This fire can also be built using stones in place of the two green logs. Caution should be taken that sand stone or shale are not used as they will explode.

b) Trench Fire

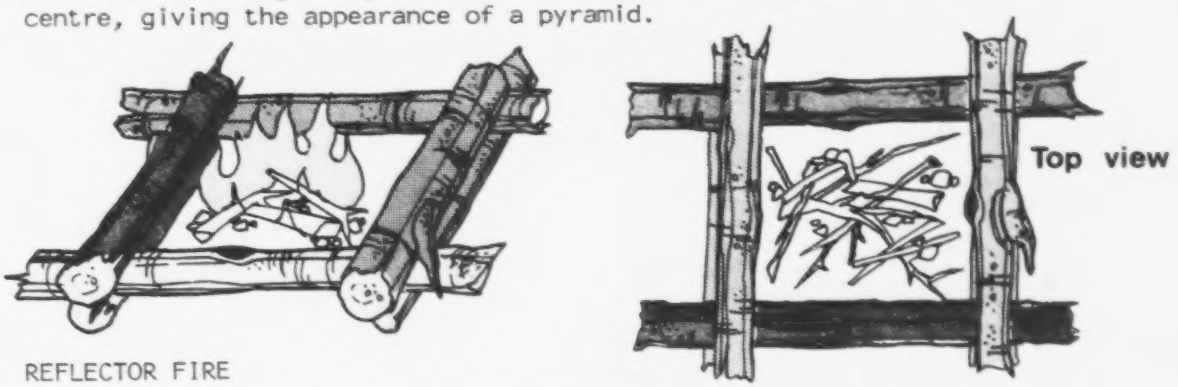
This is another variation of the Hunter Trapper Fire. A trench is dug about 30 cm wide and sloping from ground level at the windward end to 15 cm wide and 30 cm deep at the leeward end. Cooking vessels are supported directly on the side of the trench, or green sticks can be laid across the trench. Coals and fire can be spread along as needed

for each item on the menu. If you use stones, be certain that they are not the creek variety which are moisture-laden and may explode in the fire.



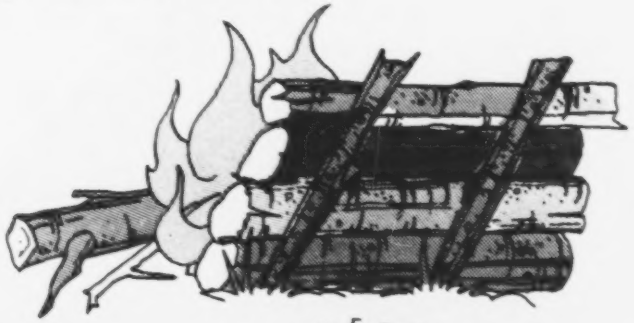
LOG CABIN FIRE

This is also an excellent cooking fire, especially when a good bed of coals is needed. It is built around a small wigwam of tinder which burns down quickly to a bed of coals. Sticks not more than 2.5 cm in diameter should be used. Place logs around tee-pee tinder in the manner of building a log cabin. Gradually lay the logs toward the centre, giving the appearance of a pyramid.



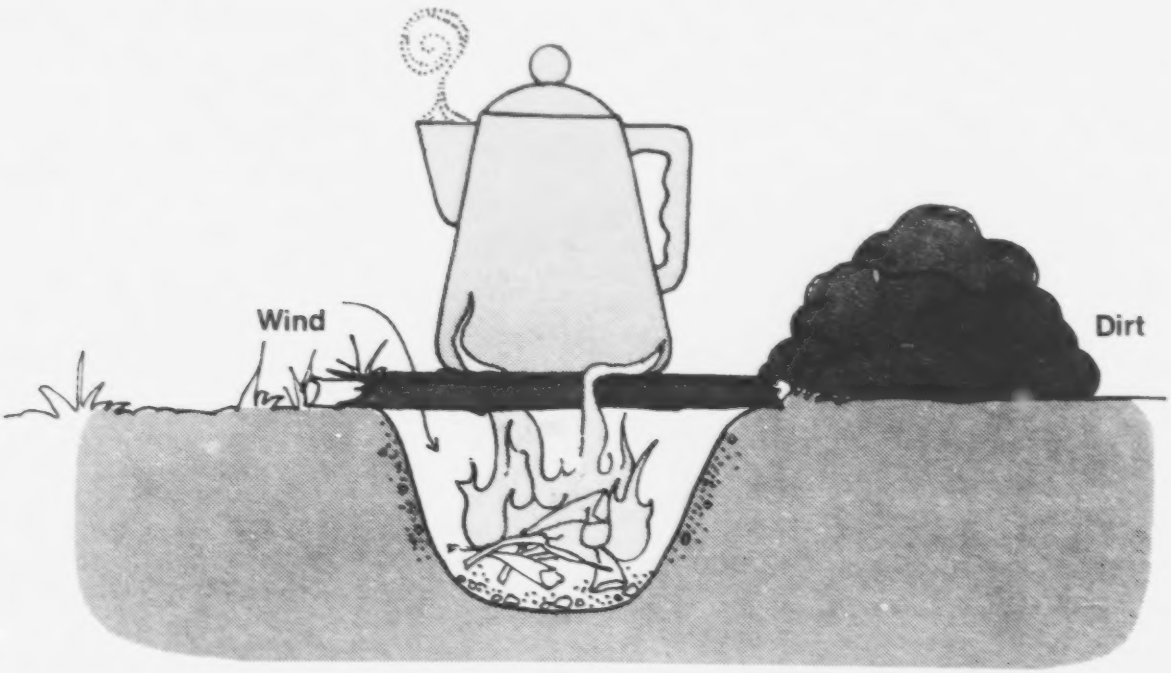
REFLECTOR FIRE

A relector fire is used for baking with a tin reflector oven, or for reflecting the heat into an open tent, or for protection from the cold. It consists of a firebank of three or four logs stacked up against a couple of upright supports driven into the ground, and with a slight angle to them. Stones or a single big boulder make even a better firebank than the logs if the rocks are available. The reflector is placed on the leeward side of the fire so that the smoke and flames are blown onto it, and only the heat is reflected onto the food that is baking. You can devise a reflector oven as shown in the section on Making Your Own Equipment.

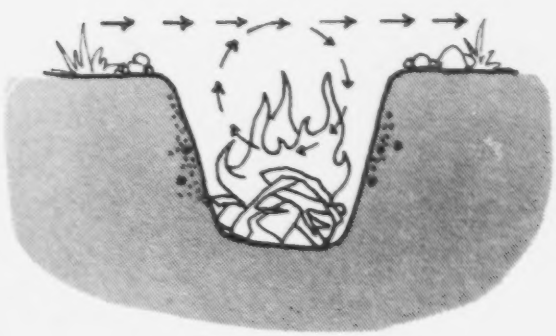


FIRE IN A HOLE

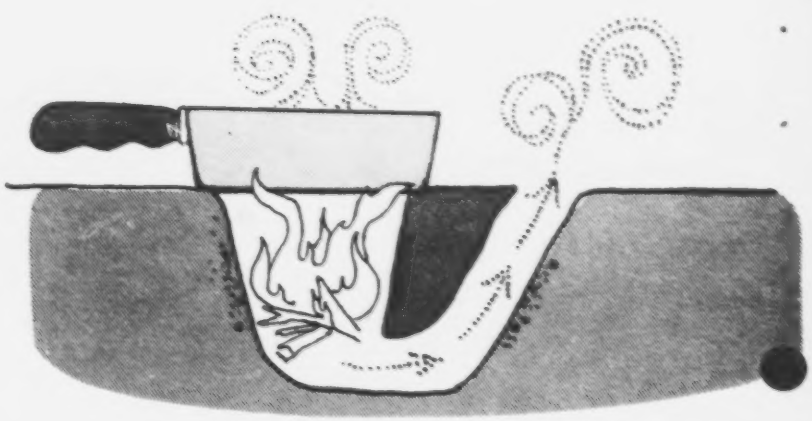
This is a good fire for a one-pot meal. It is laid in a small hole about 30 centimetres wide and 15 - 25 centimetres deep. The walls of the hole reflect all the heat up to the pot, which is supported by green sticks laid across the hole. The dirt, which was removed, should be placed on the leeward side of the fire so that it doesn't interfere with the draft, and can be replaced after the cooking is finished. This is a good hot weather fire as the heat doesn't spread out but is directed upward. It is also fine for a windy day, for there is little chance of sparks scattering.



The Indian Fireplace was used on the Prairie to produce a bed of coals. Place sods and dug-up soil as shown.



A Dakota Fireplace is White Man's prairie fire for cooking with a pot. The "chimney" at the side gives the necessary draft.



OUTDOOR COOKING EQUIPMENT AND METHODS

What devices you use will depend on what kind of a trip you are going on and how much you want to take with you. There are two main classes of cooking devices: Modern Cooking devices and Improvised devices.

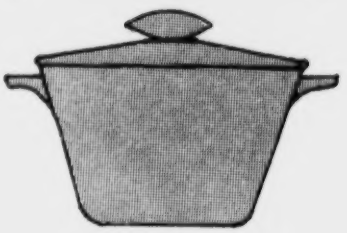
MODERN COOKING EQUIPMENT

PORTABLE STOVES

Stoves such as the Coleman stoves are good for camping if you are travelling in a vehicle or are going to be in one place for a while.

DUTCH OVENS

Large stew pots or dutch ovens are very good for cooking in large quantities over a fire. You can cook anything in them. Their big disadvantage is their size and weight.



FRYING PANS

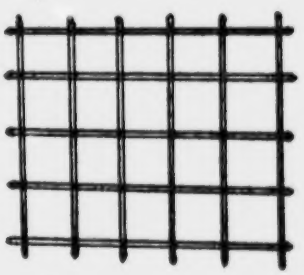
These are a very good idea to take along on any trip. A frying pan is always useful, and you can get light ones for packing.

COFFEE POTS

You should always have something in which to heat water whether it is a coffee pot or a pan or a tin.

GRILLS

These are cumbersome but are useful to put over the fire. They are not suitable when back packing.



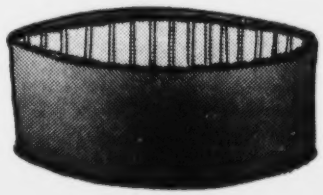
MAKE YOUR OWN DEVICES

A BUDDY BURNER

Materials needed:

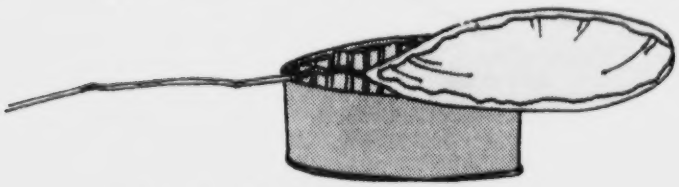
- a small shallow can, such as a tuna can
- corrugated cardboard strip cut to fit in can with holes showing
- paraffin wax
- a string wick (optional)

Instructions:



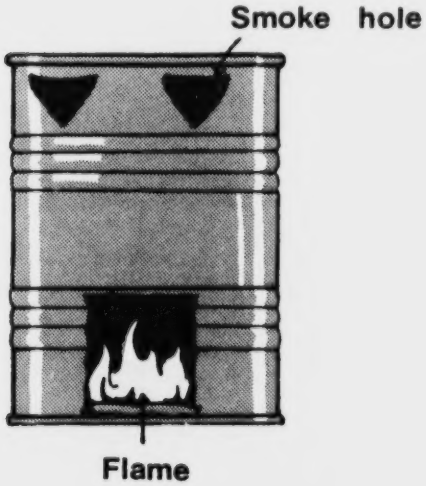
Melt a block of paraffin. Roll the corrugated cardboard strip to fit into the can. Add a wick in the middle. Pour in the melted paraffin. The burner should look like this:

You can make a damper for the burner to put the flame out or to control the size of the flame. Use the lid of the can to estimate the size of aluminum foil you would need to just fit inside the can. Use a triple thickness of foil folded around a wire hanger. Hold this damper over the flame to extinguish it. To cut down on the heat, just cover half or a quarter of the can. This Buddy burner now becomes a source of heat for a tin can stove as follows:



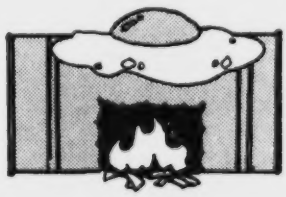
TIN CAN STOVE

Obtain a clean Number 10 can and remove one end. Using tin snips, cut a firing hole (7.5 X 10 centimetres) at the bottom and slide the cut out end of the can against the closed end so that you will have a double layer of metal at the top. Punch out four or five smoke holes at the side of the closed end. This will help hold the lid at the top too. Now you are ready to cook on the top of the stove. This is best for one or two people because of the space limitation. Build a small twig fire underneath or use your buddy burner to provide heat to cook your meal.



Variation: Tin Can Frying

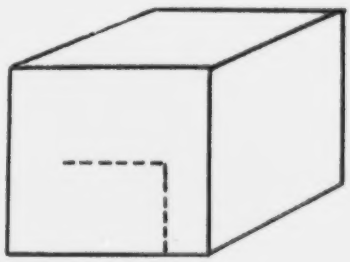
Build a very small fire under a can which has had part of its side cut out as shown:



REFLECTOR OVEN

Reflector ovens can be used for any food which you would normally bake in an oven at home: pizza, biscuits, cake, cookies and other food. There are two methods of constructing a reflector oven:

a) Cardboard Box and Foil



Materials needed:

- medium-sized cardboard box
- aluminum foil
- hot coals (charcoal or wood)
- two empty tuna cans or flat rocks
- small grate to fit inside box

Instructions:

1. Cut a small door in the front side of the box. If you cut just two edges, then you can flip the door to the side to peek in, and keep it closed during the cooking time.

2. Line the inside of the box and door with aluminum foil. Make sure the shiny surface is facing out so that heat will be reflected off the shiny surface onto the food.

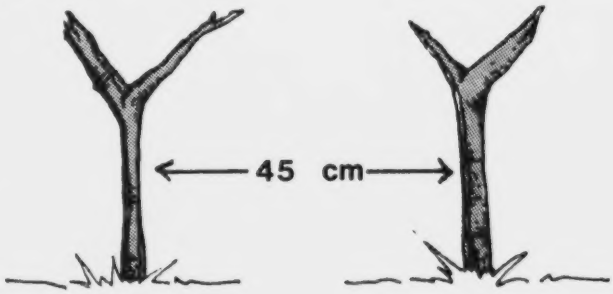
3. Place a small pile of hot coals on the ground and situate the grate on top of the coals; balance it on the two tuna cans or flat rocks.

4. Place the pan with the food on the grate.

5. Place the box over this and leave covered until the food is done.

You could use this to bake buns, cake, pizza, or any other food that you would normally bake in an oven.

b) Aluminum Foil Oven



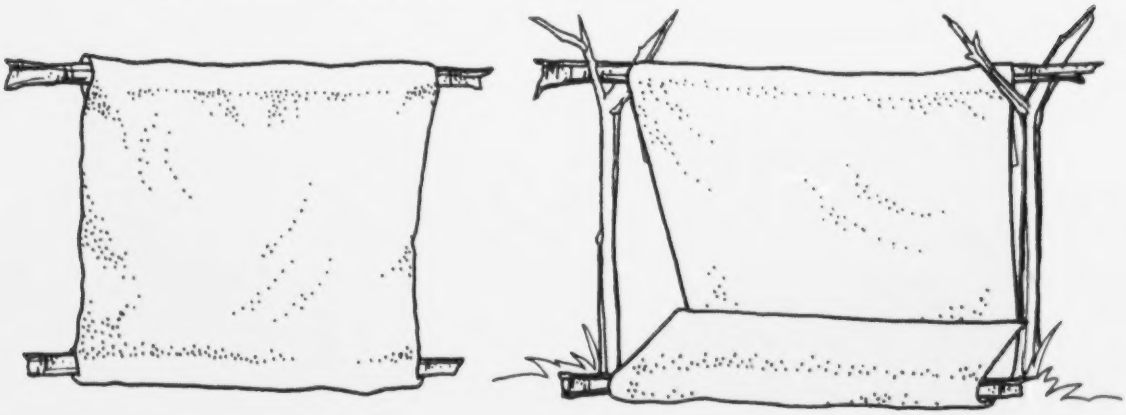
Materials needed:

- two Y-shaped sticks
- two 50-centimetre straight sticks
- heavy duty aluminum foil

Instructions:

1. Stick the two Y-shaped sticks in the ground approximately 45 centimetres apart.

2. Take a large sheet of foil and twist each end around a 50 centimetre stick.



3. Lay one stick across the Y-shaped sticks.

4. Fold foil in half with shiny sides together, then open and place lower half on the ground with second stick at the base of the Y-shaped sticks.

5. Anchor to ground with rocks at fold and near Y-shaped sticks (inside oven).

6. Cut a piece of foil to close in each end.

7. Wrap edges to attach.

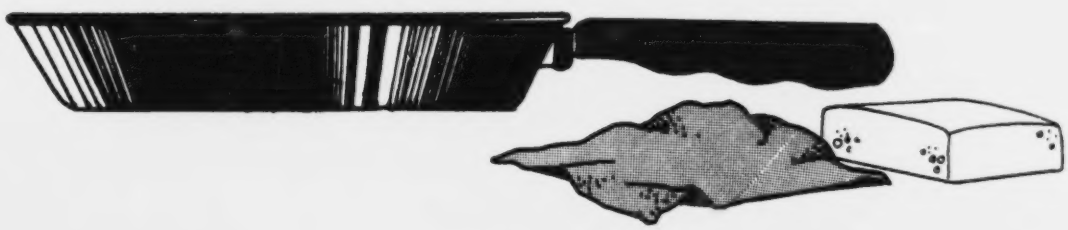
8. Place open side of oven in front of fire.

NOTE: A tee-pee fire works best with this type of oven.

GROUND OVEN

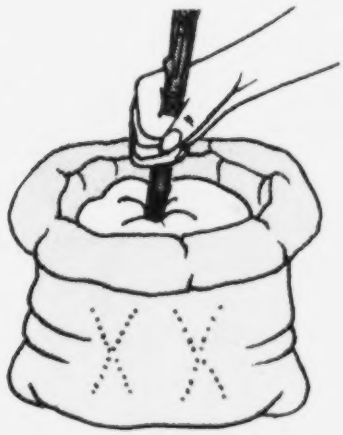
Scoop a hollow in a bed of glowing coals and put an inverted pie food to be baked on pie plate. Cover with an inverted metal dishpan. Heap hot coals around and over dishpan. Leave covered until food is done.

HINT: Remember! Before you put your skillet or cooking pot near the fire, rub a cake of lathered soap or liquid dish detergent over the outside... then washing the skillet will be easier.

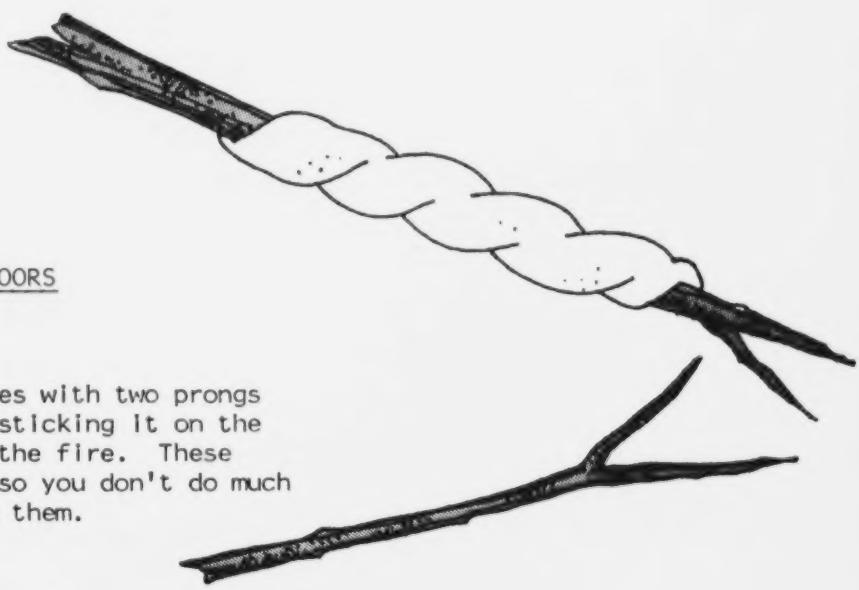


NON-UTENSIL COOKING

On the trail, you may want to travel extra light-weight sometimes. In that case, leave pots and pans at home and cook without them. Carry a knife though, because you will need to cut a branch or sharpen a stick for many of these non-utensil cooking stunts. Bring foodstuffs in plastic bags. If you plan to make bread, the bag of flour mix will be your mixing bowl. Make a hole in the middle of the flour, pour in a little water and stir it into the flour with a short stick until a lump of dough hangs onto the stick. Twist this dough around a larger stick and bake. Outside of this, the main trick is in making the correct fire which is usually a bed of glowing coals.



For a twist make rather stiff biscuit dough. Form into a long sausage and twist around the stick. Bake over glowing coals.



COOKING UTENSILS FOUND OUTDOORS

TOASTING STICKS

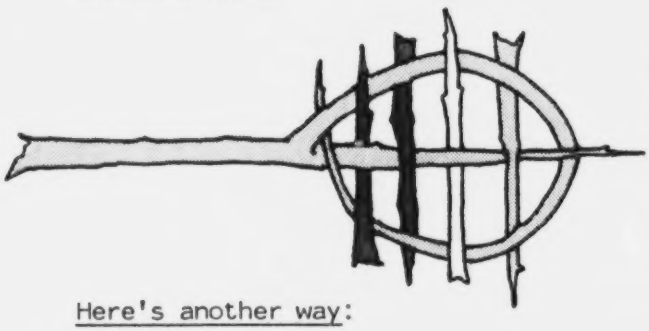
Cut these from green branches with two prongs on the end. Toast food by sticking it on the prongs and holding it over the fire. These sticks can be fairly small so you don't do much harm to the area by cutting them.

BAKING STICKS

These are cut from stronger green branches, and food is speared or wrapped around the end of each stick. Baking is done slower than toasting so the inside gets cooked too, and the food is not just browned on the outside. You can also use foil to wrap food around the end of a stick or wire; for example, ground meat can be cooked this way.

NOTE: A forked stick will make a good broiler for frankfurters and a small steak. It is also good for toasting slices of bread.

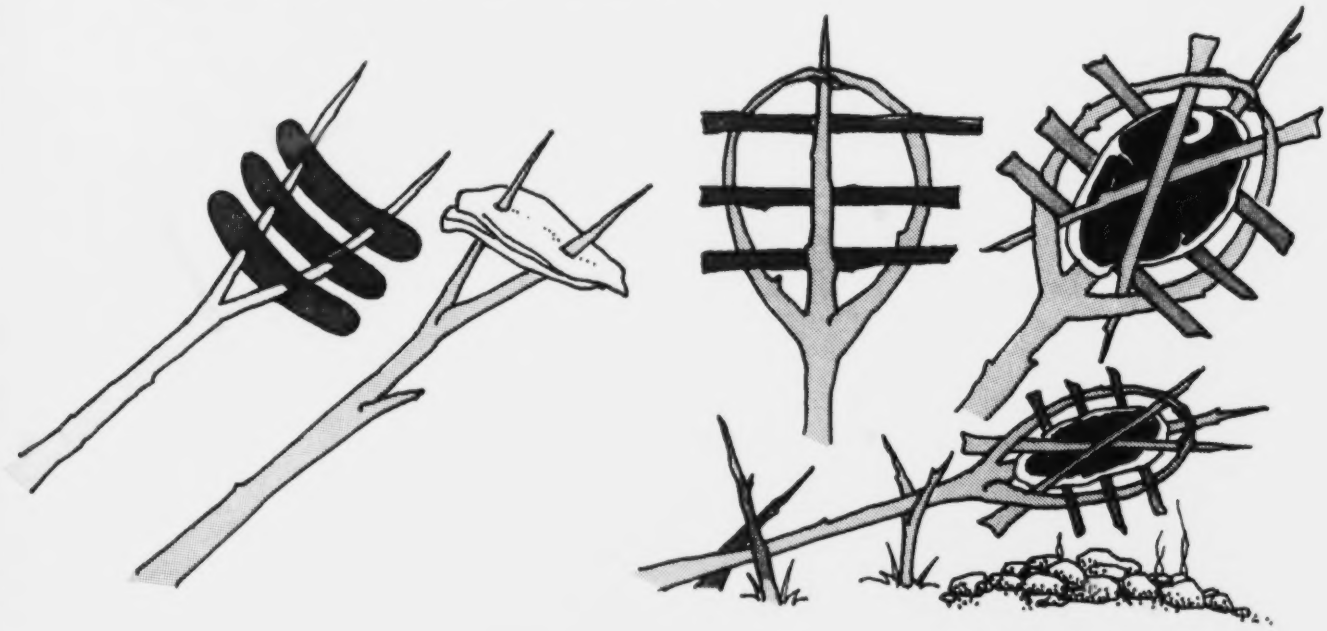
BROILING RACKS



A little patience is needed to make a grill from young green saplings. Soaking a sapling in water will ease the bending. Poplar is the best because it doesn't burn very well.

Here's another way:

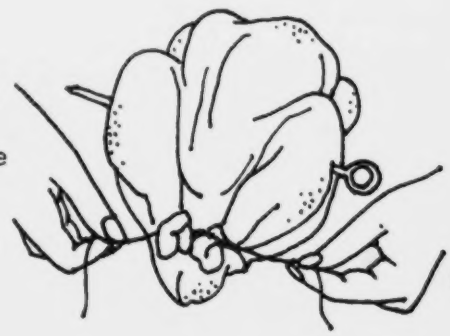
For a larger steak make a broiler from a stick with three thin tines. Turn the three-tined fork into a tennis racket broiler. Anchor the steak in place with two sticks (see diagram below).



Try fish this way: Clean fish. Spear on a stick. Cook over coals until done.

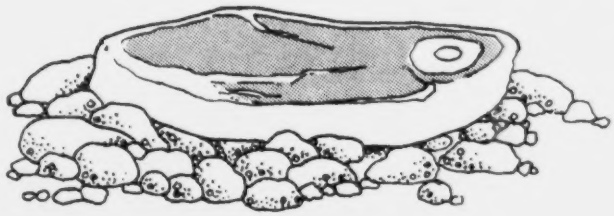
ROASTER

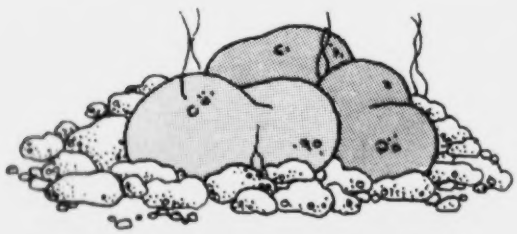
You can roast a chicken on a string in front of a reflector fire. Do not stuff the bird so that it will cook faster. Push a skewer through the wings and another through the legs. Throw a string loop around one skewer and attach the free end of the string to the top of the stick before the fire. When the chicken is half-done turn it by shifting the string loop to the other skewer. Continue roasting. The approximate cooking time is two to three hours.



COAL COOKERY

Tarzan steak is laid directly on top of the coals. Blow the white ash off the coals first. Broil three to five minutes. Turn, broil the other side.



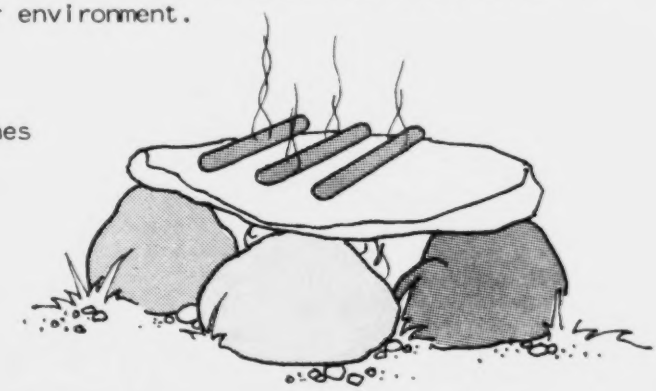


To roast potatoes, scrape the coals away, place the potatoes in their place, rake the coals back over the potatoes. Roast 45 to 60 minutes.

The main thing to remember is to improvise and make the best possible use of what you have, while keeping in mind the need to practice conservation in order to avoid damaging the outdoor environment.

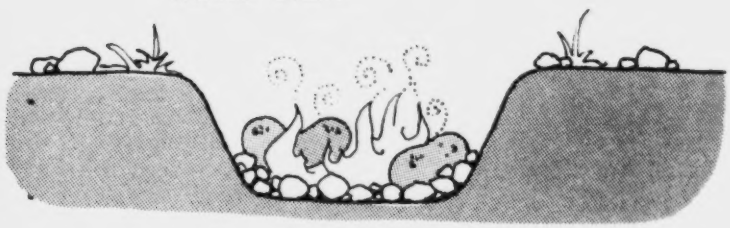
FLAT STONE COOKING

Build a fire and put four stones around the edge. Place a fairly thin flat stone on top and cook food on the stone. You may place four or more stones on the corners of the cooking stone and place other flat stones on top to prevent all the heat from escaping.



OR, Let a fire burn down to coals over a flat stone. When the stone is hot, sweep the coals away. Grease the stone. Cook an egg in a hole in a slice of bread or between two slices of bacon.

GROUND OVENS



Line a pit with stones. Build a fire in it. Place foil-wrapped food in the coals to steam.

FOIL COOKERY

Foil cookery is another way of non-utensil cooking. This is such a popular way to cook outdoors that a separate chapter has been devoted just to foil cookery.

FACTS ABOUT FOIL

Aluminum foil can be a great aid in campsite cooking. It has two main drawbacks: that it is completely non-disposable and it is fairly expensive, particularly the heavy-duty type which is far better for this purpose than the ordinary kitchen variety. However, personal responsibility can protect the environment, and the heavy foil's many uses can make the expense well justified. If you use the lighter kitchen foil, use double to triple layers and this will work about as well.

USES FOR FOIL

Some of its many uses include:

1. Line your utensils with it to save scrubbing and scouring. Pots can be lined inside and outside to keep the pot from being permanently blackened.

2. Snug wrappings around matches and food provides adequate waterproofing in case of flash floods.

HINT: Dip matches in paraffin wax. Then cut a strip of corrugated cardboard. Store your matches by placing them in the grooves of the cardboard. Roll up the cardboard and store it in a tin.

3. Make your own pots or pans: Lash the ends of a forked stick into a circle and fill it in with foil in the shape of the utensil desired. You can fry meat, make soup or cocoa in this manner and eliminate the weight of pots and pans in your pack. The frame for the utensil can also be made from a coat hanger thoughtfully left behind by a previous camper.

Use a double layer of foil.

4. Place a sheet of foil tightly over the metal top of a camp stove to form a clean, handy grill.

5. Campstove oven lining.

6. Pot lids.

7. Frying pan divider. Shape into sections and line your pan so you can cook two or three things at the same time in the same pan - similar to the divisions in a TV Dinner.

8. Poach eggs over boiling water.

9. Form biscuit, cake, or muffin tins.

10. Cup - shape aluminum foil around your fist. Turn down the edges to make a lip for drinking.
    OR - shape a double thickness of aluminum foil around a can. With the excess, mold a handle and turn down the edges for a lip.

11. Plates and pans can be shaped over the cut edge of a log in a similar fashion.

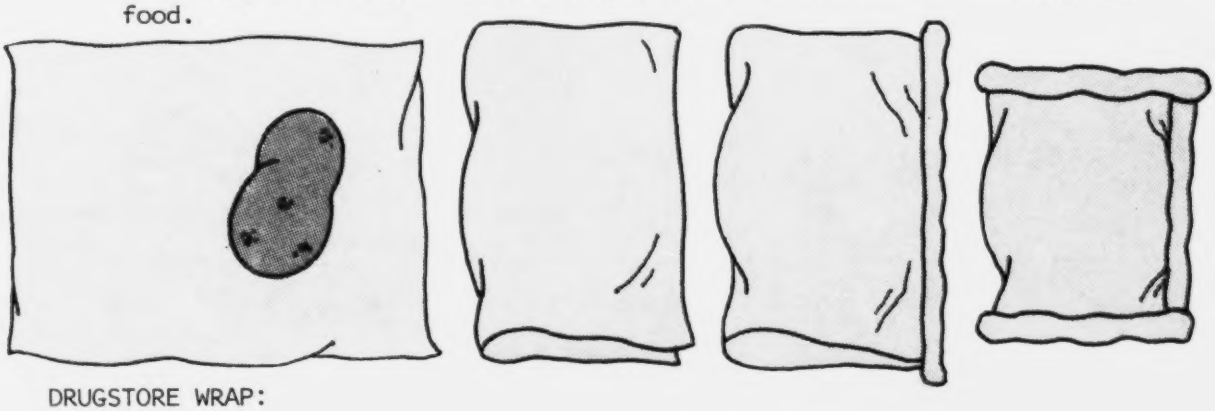
12. To try and construct such a container as a kettle to hang over a fire to boil water is not practical. Too much volume can prove too heavy and just pull the foil apart and douse your fire.

13. And last, but not least, Foil Cooking itself! But first some handy hints before your venture into this creative field...

HANDY HINTS FOR THE FLEDGLING FOILER

1. If you want to take extra foil, but not the whole package, roll it around a ruler or some such object. Do not fold it. This causes creases in the foil and holes can develop which let out the juices and let in the ashes while you cook.

2. To develop sort of a pressure cooker effect, be sure to fold the seals in a drug store wrap. Do not simply roll or fold the foil around the food.

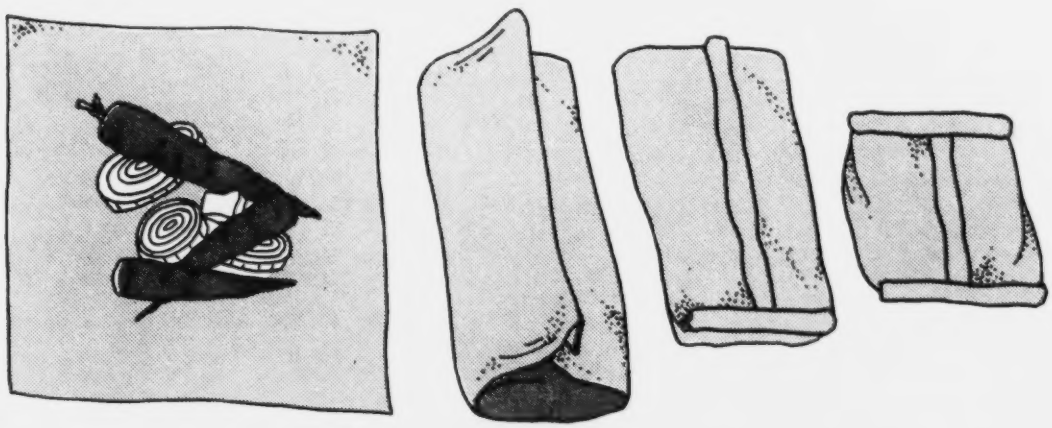


DRUGSTORE WRAP:

Place item to be cooked on a sheet of aluminum foil. Wrap should be big enough to allow for a three-fold crimping of open edges. Next fold in half and crimp the three open edges; make three folds on these edges this makes an air tight envelope. If light weight foil is used, take another sheet of aluminum foil the same size as the first and repeat the process thus making a double layer around the food.

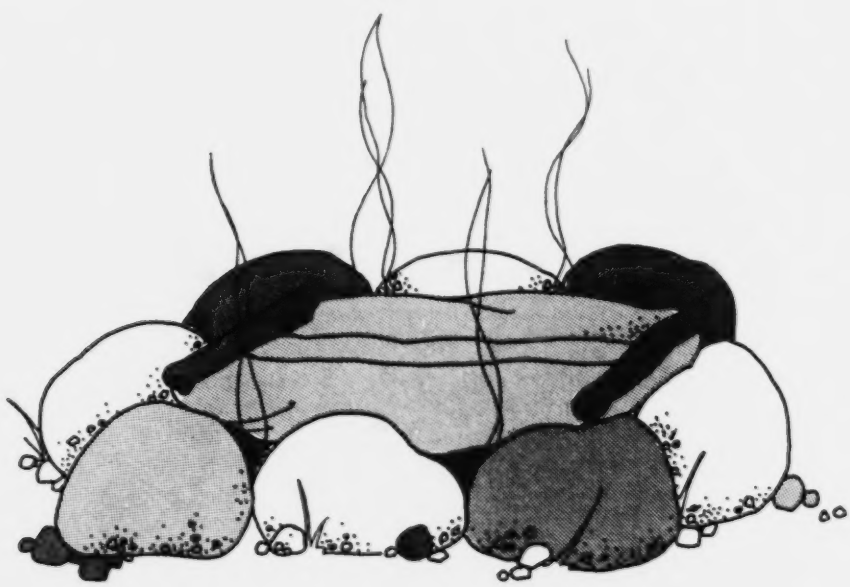
3. When cooking fish and meats the package can be tightly wrapped. For vegetables more air space is required to allow for steam expansion and to blend flavours.

4. For foods with no natural fat in them: oil, butter, or margarine should be added.



HINT: A rule of thumb is that a foil package 2 - 5 centimetres thick requires about 20 minutes of cooking time, or 10 minutes per side.

5. The package should be placed directly on the coals in an open fire.



FOILED AGAIN

A few foil cookery recipes that you will love to try.

VEGETABLES IN FOIL

Tasty Taters

Pare and cut spuds. Sprinkle with onion soup mix, 15 ml water, one pat of butter. Seal and bake in the coals and ashes about 25 minutes or until soft. (30 to 40 minutes on grate over flames).

Cheese Potatoes

Pare and cut spuds. Add salt and pepper. Crumble on some crisp bacon, add onion slices and cubes of cheese. Place pieces of butter over all and mix together. Seal. Cook on grill about 40 minutes.

NOTE: Potatoes and onions are slow to cook - about an hour if not cut up. To prevent burning place them near the edge of the coals rather than right in the middle. You can also wrap the first foil layer in three layers of newspaper then wrap again in foil. This helps to control the heat.

Peas in Foil

284 ml can of peas
30 ml onion soup mix
30 ml butter
30 ml crisp chopped bacon

Blend the onion, butter and bacon. Take the peas out of the package and blend them with the mixture. Wrap the frozen peas in foil and cook them on a grill over the coals for 15 minutes.

Carrots in Foil

Scrape fresh carrots and cut off the ends. Then either sliver or slice the carrots. Lay the pieces together on a doubled foil rectangle, add butter, salt, and pepper. Wrap and seal with a drugstore fold and cook the packet in the coals.

Corn on-the-cob

Strip off some of the outside husk and open the inside husk to remove the silk. Spread butter on the corn and replace the inside husk. Then roll each ear in foil and twist the ends. Roast the corn over the coals for about 20 minutes, turn it frequently. Add more butter and some salt when the corn is removed from the wrappers.

HINT: To wrap whole fruits and vegetables in foil:

a) Round shapes like onions and apples - start with two squares of aluminum foil. Tightly wrap around the item and twist at the top.
b) Long shapes - roll in a sheet of foil and tightly twist the ends.

MAIN COURSE MEALS IN FOIL

Hamburger Meal in One Package

Ingredients:
hamburger
canned string beans
sliced onions

Place a pat of butter in the centre of the foil. Press hamburger to about 0.5 centimetres thick and season. You may use bite-size pieces if you prefer. Then add the drained string beans and onions. Add another pat of butter on top. Salt and pepper and wrap. Cook 40 minutes.

Try other hamburger combinations. Here are a few suggestions:
sliced or diced onions, potatoes, and carrots
mixed vegetables

Ham, with Sweet Potatoes

Place a slice of raw ham on foil. Slice potatoes about 1 centimetre thick and place on top of ham. Then add slices of apple or pineapple. Wrap and cook 45 minutes. Precooked ham will be ready in about 30 mintues.

Link or Bulk Sausage, Potato or Apple

Cut core out of a potato or apple Stuff with a link sausage or with bulk sausage. Wrap in foil and cook for 45 minutes.

Chicken Dinner in a Packet

Ingredients per person:
1 piece cut-up chicken
salt, pepper, paprika
1 sliced tomato
1 sliced peeled potato
1 sliced small onion
2 whole mushrooms
2 green pepper rings
30 ml tomato juice

Method:
Place chicken piece, skin side down, in centre of foil sheet about 45 by 30 centimetres. Sprinkle with seasonings and arrange vegetables on top. Seal with drugstore wrap; double wrap if not using heavy duty foil. Cook on grill about 8 to 10 centimetres from hot coals until food is tender - approximately 1 to 1¼ hours. Turn packets every 15 minutes until done.

Fisherman's Delight

Ingredients per person:
1 serving whitefish or trout
1 small potato (1 cm slices)
1 slice bacon
1 small onion, sliced
carrot strips, string beans, asparagus stalks, or other vegetables as desired
seasonings

Method:
Clean and wash fish and vegetables. On one-half of the foil place half a slice of bacon and lay fish on it. On and around this arrange potato slices, onions, and carrot strips. Add other vegetables and seasonings. Put another slice of bacon on top. Fold seal and double wrap. Place dinner on coals (not flames) for 10 minutes. Turn over carefully and leave for 10 minutes more. Length of cooking time depends on size of fish. Zip off wrap and serve in the foil.

SANDWICH IDEAS IN FOIL

Tunaburgers - makes 8 sandwiches
(not truly a foil dinner it but makes use of foil as a warming utensil)

Ingredients:
250 ml shredded Cheddar cheese
3 hard-cooked eggs, chopped
1 small can tuna, drained and flaked
30 ml each: chopped green pepper, chopped onion,
chopped stuffed olives and chopped sweet pickle
250 ml mayonnaise
8 hamburger buns

Combine all ingredients except buns in a small bowl; divide the mixture equally among buns. Wrap each bun in heavy duty foil and grill until warm, about 20 minutes.

DESSERTS IN FOIL

Baked Banana Boat (one per person)

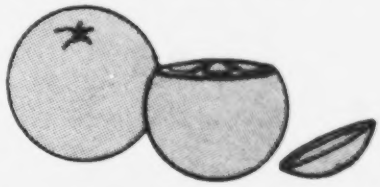
Select under-ripe or green-flecked bananas. Wash and with a paring knife slash the skin on the inside curve of the bananas; cut down into the banana and spread it apart. Insert small pieces of marshmallow and long slender fingers of plain milk chocolate bars. Pull the skin together; wrap each banana in foil. Place over the coals and cook for about 10 minutes. Turn once. Serve hot.

Baked Apple (serves one)

Ingredients:
1 apple
¼ pkg. red hot candies
OR
15 ml brown sugar
5 miniature marshmallows
dash cinnamon
2 ml butter
5 ml nuts or raisins
5 ml shredded coconut

Core the centre of the apple and peel it about one-third down. Place either the red hots or the brown sugar and marshmallow mixture in the apple centre. Wrap in foil by bringing the sides up and twisting at the top. Cook slowly on coals.

Cake in an Orange (one orange per person)



orange or pineapple cake mix
8 - 10 medium oranges

Prepare cake mix (in a plastic zip-lock bag if no mixing bowl is available). Slice the orange one-third of the way from the top of the orange. Spoon out the fruit leaving an empty shell. Fill halfway full with cake batter. Put the orange "lid" back on and wrap in foil. Place in hot coals to bake.

MENU PLANNING

Besides being fun, outdoor meals can be appetizing and nutritious. But when you select foods for outdoor cooking, you must consider several things:

Weight is a major concern so that premeasured portions would prove beneficial. Remember to include energy food - chocolate, raisins, cheese, and sweets.

Since there are different ways of cooking - boiling, stewing with smaller amounts of water, simmering at a lower temperature, broiling on direct heat with no pan, frying, and roasting on a spit - and since cooking times vary with the heat of the fire and the distance the food is from it, getting everything ready at the same time is a problem. A time chart for each dish could be worked out before the trip so that the order of cooking is known before you actually start.

Menu planning for the outdoors is easier now due to the development of dehydrated and freeze-dried foods. They are both light weight and nourishing. There's another benefit as well. When you are planning your lunch for your hike, did you put in a fruit only to find it was smashed or badly bruised when you were ready to eat it?

Apricots, prunes, apples, figs, peaches, powdered eggs, and milk are some dehydrated foods available. The fruits can also be cooked and served as a dessert or used as fruit with your breakfast. In hiking shops you may find freeze-dried pork chops and vegetables. Follow the directions on the package for cooking.

CHECKLIST FOR MENU PLANNING

Use the check list below to help plan your next outdoor meal:

1. EASE OF PREPARATION
   - How much time would it take to cook the meal you have planned?
   - What equipment would you need to cook the meal?

2. COST OF MEAL
   - How many people are there?
   - Would any of the foods spoil and be wasted?
   - Can you afford the more expensive but less bulky dehydrated foods?

3. PACKAGING
   - Do you need to repackage the food into smaller packets?
   - How far could you carry the food? (e.g. canned goods are heavy)
   - How would you dispose of the package?

4. TYPE OF TRIP AND WHERE?
   - Will you be walking a long distance? How much weight can you carry?
   - Will you be staying overnight? Will the food keep without refrigeration?
   - Is water available or do you have to carry it?

5. NUTRITION
   - Have you included food from each of the food groups?

THE MENU

As a growing person you require good nutrition in order to develop a strong, healthy, and happy body.

When you cook outdoors, plan your meals around the four food groups so that your menu is varied, hearty, and well-balanced.

A well-balanced menu is one which is chosen from Canada's Food Guide and it includes the following types of foods:

YOUR DAILY FOOD REQUIREMENTS

Food Groups	Examples of Foods Suitable for Campouts
3-4 servings of milk or milk products	_____
	_____
2 servings of meat and alternates	_____
	_____
3-5 servings of bread and cereals	_____
	_____
4-5 servings of fruits and vegetables	_____
	_____

ACTION TIME - Campout Menu

Fill in the chart above with a balanced menu plan using foods suitable for outdoor cooking.

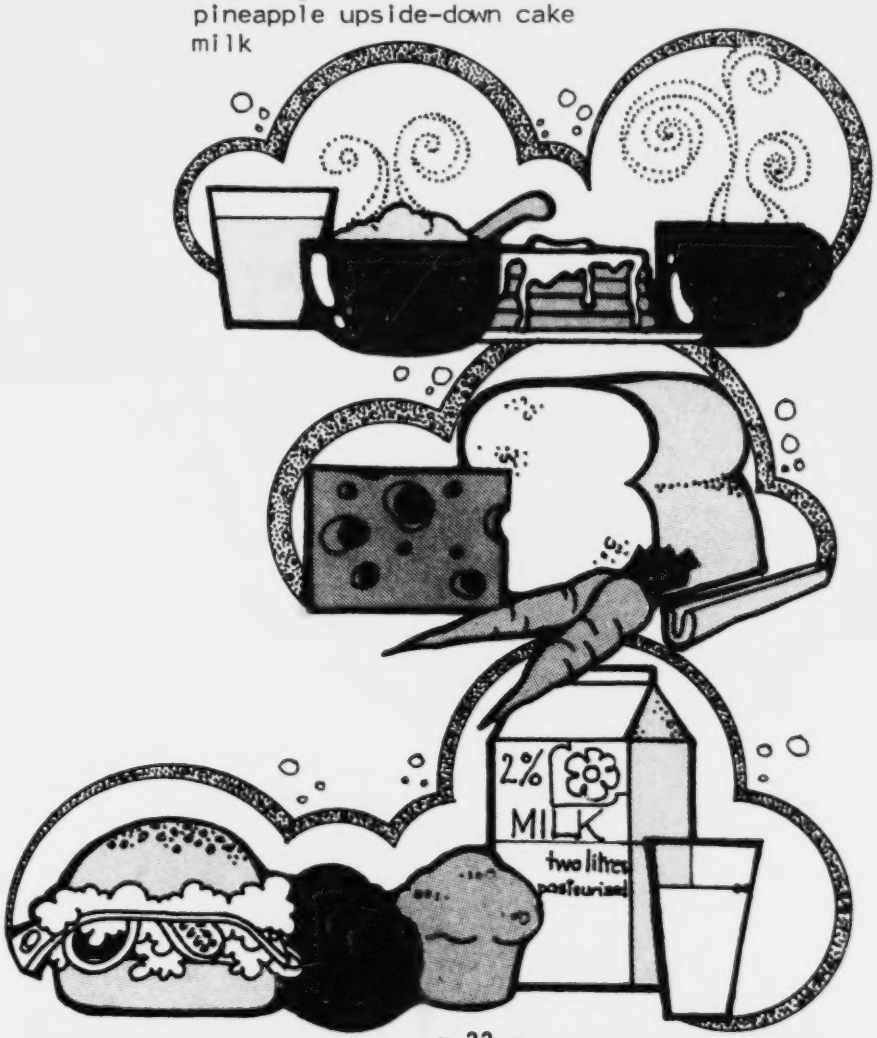
IDENTIFYING FOOD GROUPS

The following is a menu planned for a winter camp-out.
Circle the foods from the milk group in yellow.
Box the foods from the meat group in red.
Underline the foods from the bread and cereal group in green.
Draw a diamond around the foods from the fruit and vegetable group in green.

Breakfast ------ hot cereal or pancakes
bacon
tea
juice
hot cocoa

Lunch ---------- cheese sandwiches
trail mix (fruit and nuts)
carrots and celery sticks

Supper --------- soup
hamburger in fire
vegetables in foil
sourdough muffins
pineapple upside-down cake
milk



FOOD MATCH

Draw a box around each of the four food groups on the right using a different coloured crayon for each group.*

Match the food items with the food group to which they belong by circling the food item with a colour that corresponds to the colour of the boxed food group.

FOOD ITEMS:

250 ml milk
1 hamburger bun
125 ml carrot sticks
125 ml rice
125 ml orange juice
250 ml yogurt
250 ml cottage cheese
80 ml peanuts
medium corn-on-the-cob
45 g swiss cheese
125 ml green beans
125 ml macaroni
125 ml grapes
medium baked potato

FOOD GROUPS:

* Use a yellow crayon for the milk and milk products group.
Use a red crayon for the meat and alternates group.
Use a brown crayon for the bread and cereals group.
Use a green crayon for the fruit and vegetable group.

MENU PLAN

Using the list of your daily food requirements, practice planning a menu for one day including breakfast, lunch, and supper.

FOOD GROUP	BREAKFAST	LUNCH	SUPPER	TOTAL SERVINGS PER DAY
MILK AND MILK PRODUCTS GROUP (3-4 PER DAY)				
MEAT AND ALTERNATES GROUP (2 PER DAY)				
BREAD AND CEREALS GROUP (3-5 PER DAY)				
FRUITS AND VEGETABLES GROUP (4-5 PER DAY)				

Total the number of servings of milk and milk products, meat and alternates, bread and cereals, and fruits and vegetables at the end of the day. Did you meet the total requirements?

Where could you increase the servings to meet your needs?

MEAL MENU PLANNER

Now that you have practiced some menu planning, work out a menu for a cook-out by answering the following questions on the menu planner chart on the next page:

1. Which meals will be cooked outdoors?
   Fill in the blanks beside meal on the menu planner for each meal you plan to cook outdoors.

   Check the box beside each snack you will need to take.

2. Write out a menu keeping in mind the Checklist for Menu Planning. Write the menu items in the column marked Menu Item (e.g. campfire stew, tastee taters, banana dandies, and milk). The planner has been designed so that you can include something on the menu for each of the food groups. Be sure to find a recipe in your manual for the foods you will be cooking.

3. How many people will be eating each meal? Write this number on your planner in the space provided next to the number of people (#People _____).

4. In the Ingredients column write out all the food items you will need to make the meal. (e.g. if campfire stew is on your menu, you will write in the Ingredients column: ground beef, onion, vegetable soup, flour, salt, pepper, and margarine). The Ingredients can be found in the recipe that you will be using to cook that item.

5. Use your recipes to determine the amount of food you will need to make your meal. Write the amounts on the meal menu planner under the column Amount Needed.

6. Once you know the amount of food you need, make a list of all the groceries you will need to buy. Check to see what food you have at home first and use any of those supplies first.

   A checklist for food follows which you can use to make up a shopping list.

7. Use the checklist for utensils and equipment in the same way to determine what you will need to take with you to cook the meals you have planned.

MEAL MENU PLANNER

	MENU ITEM	INGREDIENTS	AMOUNT NEEDED
# PEOPLE: MEAL:			
MILK OR MILK PRODUCTS:			
MEAT AND ALTERNATIVES:			
BREAD AND CEREALS:			
FAT OR OIL:			
FRUIT AND VEGETABLES:			
BEVERAGE:			
SNACK:			
# PEOPLE: MEAL:			
MILK OR MILK PRODUCTS:			
MEAT AND ALTERNATIVES:			
BREAD AND CEREALS:			
FAT OR OIL			
FRUIT AND VEGETABLES:			
BEVERAGE:			
SNACK:			

CHECKLIST FOR UTENSILS, CAMP EQUIPMENT, AND CLEANING SUPPLIES

FOR COOKING:

_____ portable stove
_____ portable grill
_____ pan for washing dishes
_____ grease can for meat drippings
_____ mixing bowls and spoons
_____ asbestos pot holders

FOR SERVING:

_____ plates and cups for each person
_____ stainless steel spoon, knife, and fork for each person.

FOR FIRE-BUILDING:

_____ axe or hatchet
_____ shovel
_____ briquets
_____ fuel
_____ water proofed matches

FOR CLEANING:

_____ dish soap
_____ hand soap
_____ soap pads
_____ cleansers

KITCHEN TOOLS:

_____ bottle opener
_____ can opener
_____ measuring equipment
_____ peeler
_____ toasting forks
_____ turners
_____ two or three sharp knives of different sizes for paring and slicing
_____ long-handled fork
_____ large serving spoons
_____ spatula

KITCHEN TOOLS:

_____ two 4-litre pots
_____ two 20 or 25 centimetre frying pans
_____ coffee pot
_____ kettles
_____ large heavy cast iron pot <u>OR</u> dutch oven

CHECKLIST FOR FOOD AND PAPER PRODUCTS

BEVERAGE:

_____ dairy drink
_____ cocoa
_____ fruit juices
_____
_____
_____ tomato juice
_____
_____

BREAD AND CEREALS:

_____ bread
cold cereal
_____
_____
cooked cereal
_____
_____

CANNED FOODS:

fruits
_____
_____
meats
_____
_____

CONDIMENTS/DRESSINGS:

_____ catsup
_____ honey
_____ jam
_____ jelly
_____ mustard
_____ olives
_____ peanut butter
_____ pickles
_____ salad dressing
_____ vinegar
_____
_____
_____

DAIRY PRODUCTS:

_____ butter
_____ buttermilk
_____ cheese
_____ cottage cheese
_____ eggs
_____ margarine
_____ milk
_____ sour cream
_____

CANNED FOODS: (cont'd.)

soup

_____

_____

vegetables

_____

_____

DEHYDRATED AND DRIED FOODS:

_____ eggs
_____ fruit
_____ meat
_____ onions
_____ potatoes
_____ soup
_____ vegetables

_____

_____

_____

PRODUCE:

_____ apples _____ bananas
_____ celery _____ carrots
_____ lemons _____ cucumbers
_____ lettuce _____ grapefruit
_____ melons _____ green peppers
_____ onions _____ oranges
_____ potatoes _____ tomatoes

_____

MEAT:

_____ bacon _____ beef
_____ ham _____ chicken
_____ steaks _____ sausage
_____ weiners _____ ground beef

_____

_____

PAPER PRODUCTS:

_____ aluminum foil
_____ bathroom tissue
_____ garbage bags
_____ kleenex
_____ paper cups
_____ paper plates
_____ paper sacks
_____ paper towels
_____ plastic bags
_____ plastic wrap
_____ wax paper

_____

_____

MISCELLANEOUS:

_____

_____

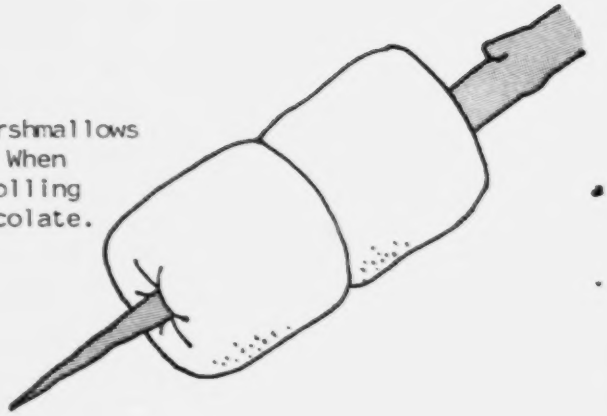
_____

_____

RECIPES

DESSERTS

MARSHMALLOWS

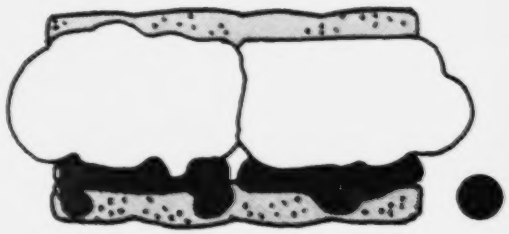


Toast the marshmallows very slowly. Marshmallows are made of sugar and they burn like paper. When the marshmallows are toasty and brown, try rolling them in cinnamon, ground nuts, or grated chocolate.

MOCK ANGEL FOOD CAKE

bread
sweetened condensed milk
coconut

Trim crusts off bread and cut into five centimetre squares. Dip in sweetened condensed milk, then roll in coconut. Toast over an open fire until brown. Tastes like angel food cake when done.



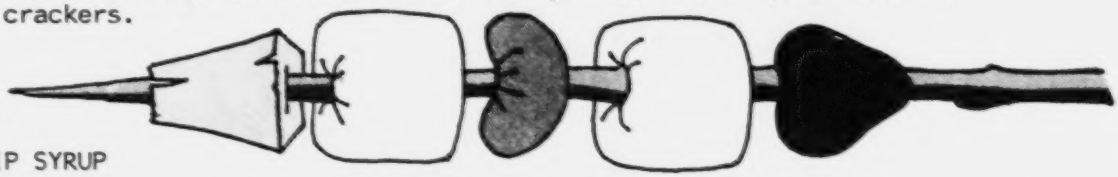
S'MORES "They make you want some more!"

marshmallows
graham crackers
flat bar of milk chocolate

Have ready a cracker topped with chocolate squares. Toast two marshmallows on a stick slowly so they will be hot and gooey all the way to the center. Use a spoon or clean stick to push the marshmallow off the stick and onto the chocolate. Top with a second cracker.

FRUIT KABOBS

Alternate marshmallows and pieces of fruit such as pineapple cubes or orange sections on green sticks. When brown, eat plain or place between graham crackers.



SYRUPS

ROSE HIP SYRUP

Snip the bud ends from a freshly gathered batch of rose hips. Then cover the fruit with water and boil rapidly until soft. Strain off the juice. Return the pulp to the kettle and add enough water to cover, and make a second extraction. For every 500 ml of juice, add 250 ml of sugar. Boil until thick. Pour into sterilized bottles and that's all! Poured over steaming sourdough hotcakes on blue-black winter mornings when the Northern Lights are still ablaze, this syrup never lasts long.

Here's an extra hint. Don't throw away the pulp. Press it through a sieve to remove seeds and skins. Add half as much sugar as pulp. Put in a clove, cinnamon, and any other spices or flavouring agents to taste. Heat covered until the sugar is dissolved. Then uncover and cook slowly until thick; stir to prevent sticking. Pack in sterilized jars and seal. Voila! Fruit butter!

TREELESS MAPLE SYRUP

The sugar maple grows only in North America. Like all green trees it mysteriously changes water and carbon dioxide into sugar. So exceptional is the sugar maple's capacity for storing the sweet that this talent is a double boon. In autumn it produces some of the loveliest hues of the North American forest; in spring it produces the amber succulence of maple syrup.

The only trouble many wilderness cooks have is that these latter activities are largely confined to such Eastern regions as the St. Lawrence Valley, New Brunswick and Nova Scotia, and such New England States as Vermont and New Hampshire. But there's a slightly incredible way around. You'll need:

Ingredients:

6 medium potatoes
500 ml water
250 ml white sugar
250 ml brown sugar

Method:

Peel the potatoes. Boil uncovered with 500 ml of water until only 250 ml of fluid remains. Remove the potatoes and use any way you want. Stir the liquid until the boiling point has again been reached. Slowly add the sugar. Once this has entirely dissolved, set the pan off the heat to cool.

See if that spoonful you doubtfully try doesn't seem to justify your worst suspicions too; but bottle the syrup and tuck it away for several days to age. Taste it again at the end of that time and see if you aren't pleasantly surprised.

BREADS

BISCUITS

Add hot biscuits to a meal and it's "special". Whether it's Sunday breakfast, an extra treat when company drops by, or doughboys baked over the campfire - any way you serve them, biscuits are "special".

Ready made biscuits in a can from the refrigerated case at your grocery store are very good to use for outdoor cookery. They are easy to use because the "work" is already done for you. Simply follow the directions on the can and you will have tasty biscuits in a few minutes.

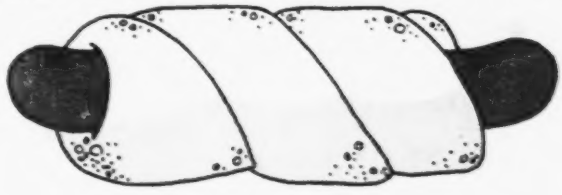
These same biscuits can be used for the twisters and doughboys you will be cooking over the campfire. Simply shape the dough with clean hands into the desired shape and bake over the hot coals.

Biscuit Twists or Doughboys

Use canned biscuits and reshape the dough or use a mix following the directions on the package for the twists. Mold the dough into a ribbon about 5 centimetres wide and as thick as your little finger.

Get four sticks of wet green wood (willow, hazel, alder, or vine maple) about 60 centimetres long and 2.5 - 5 centimetres thick. Peel the large end and heat for a few minutes over the fire. Dust the stick with flour. Wind the ribbon of dough spirally around the peeled end of the sticks.

Bake over hot coals. Turn so they bake evenly. The "Twists" should slip off the stick easily when they are done. Put a weiner, cheese, or bacon in the hole or eat the twist plain.



Other Outdoor Biscuit Tricks

...Wrap strips of biscuit dough around a weiner...fasten at either end with a toothpick. Roast over hot coals.

...Biscuits and bread are easily toasted over an open fire. Split and butter bread or biscuits. Place them buttered side down on a piece of heavy duty foil. Lay foil on the grill or cooking rack. The bread will brown to perfection in about five minutes.

If you would like to make biscuits from "scratch", ask your leader or parent for help. A basic biscuit mix recipe follows which can be used to make biscuits, muffins, pancakes, and dumplings.

Biscuit Mix

2 litres sifted all-purpose flour
375 ml nonfat dry milk
50 ml baking powder
15 ml salt
375 ml shortening

Stir dry ingredients until well mixed. Cut in shortening until well mixed. Store in tightly covered container in a cool place. Use within a month. Makes 2.5 litres.

Recipes Using Biscuit Mix:

1. Biscuits

500 ml Biscuit Mix
100 to 125 ml water

Add water to the dry mix using enough to make dough that is soft but not sticky. Turn dough onto a lightly floured board and knead a few times.

Roll or pat to two centimetre thickness. Cut with a biscuit cutter or cut into squares with a knife. Bake at 230°C (very hot oven) 12-15 minutes, or bake as doughboys in previous recipes. Makes 12 five-centimetre biscuits.

2. Buttermilk Biscuits

500 ml Biscuit Mix
125 ml water
30 ml vinegar

500 ml Biscuit Mix
100-125 ml water
50 ml grated cheddar cheese

Use the same method as Plain Biscuits.

3. Peanut Butter Drop Biscuits

500 ml Biscuit Mix
125 ml peanut butter
500 ml water

Work peanut butter into biscuit mix with a fork. Stir in water. Drop biscuit from a teaspoon on an ungreased baking sheet. Bake 15 minutes in 230°C oven, or bake as doughboys. Makes 16 five centimetre biscuits.

Variation: Drop biscuit on griddle. Cook biscuit on both sides.

4. Muffins

250 ml Biscuit Mix
80 ml water
1 egg, beaten

Grease six medium-size muffin pans. (These can be shaped from heavy aluminum foil. Grease well.) Combine all ingredients and stir just enough to moisten dry ingredients. Fill muffin pans two-thirds full. Bake at 220°C or on hot coals for about 20 minutes. Makes six medium-sized muffins.

5. Pancakes

250 ml Biscuit Mix
1 egg beaten
125 ml water

Combine all ingredients; stir just enough to moisten dry ingredients. Drop by spoonfuls onto a hot greased griddle. Cook slowly until the surface is covered with bubbles, turn and cook until second side is well browned. Makes about six medium-sized pancakes.

6. Potato Pancakes

500 ml finely grated raw potatoes, drained
50 ml water
2 eggs, well beaten
50 ml Biscuit Mix
5 ml teaspoon salt

Mix all the ingredients in a bowl until blended. Drop into pan containing 6 ml of hot fat. Bake until golden brown. Makes about 18 pancakes.

7. Fruit Dumplings

1 can fruit (700 ml) 200 ml water
750 ml Biscuit Mix

Heat fruit until bubbling. Add water to Mix all at once, stir about 30 times. Drop by spoonfuls onto hot fruit. Cook and boil gently for 12 minutes without removing cover. Makes 6-8 servings.

BANNOCK

This is the famous bannock of the prairies. The basic recipe for one hungry outdoorsman follows. If you want more, increase the ingredients proportionately.

250 ml flour
5 ml baking powder
1.5 ml salt

Mix these dry ingredients, take all the time you need to do this thoroughly. Have your hands floured and everything ready to go before you add the liquid. If you are going to use the traditional frying pan, make sure it is warm and ungreased.

Work quickly from now on, stir in enough cold water to make a firm dough. Shape this, with as little handling as possible, into a cake about 2.5 centimetres thick. If you like crust, leave a doughnut-like hole in the middle. Dust the loaf lightly with flour so it will handle more easily.

Lay the bannock in the warm frying pan. Hold it over the heat until a bottom crust forms. Rotate the pan a little so the loaf will shift and not become stuck.

Once the dough has hardened enough to hold together, you can turn the bannock over. This, if you've practiced a bit and have the confidence to flip strongly enough, can be easily accomplished with a slight swing of the arm and snap of the wrist. Or you can use a spatula, supporting the loaf long enough to invert the frying pan over it and then turning everything together.

With a campfire, however, it is often easier at this stage just to prop the frying pan at a steep angle so that the bannock will get direct heat on top. When crust has formed all around you may, if you wish, turn the bannock over and around a few times while it is changing to an appetizing brown.

When is the bannock done? After you've been cooking them for a while, you will be able to tap one and gauge this by the hollowness of the sound. Meanwhile, test by shoving in a straw or sliver. If any dough adheres, the loaf needs more time. If you have other duties around camp, twice that time a bit farther from the heat will allow the bannock to cook more evenly.

Bannock Changes

Variations of the basic bannock recipe are innumerable. Inclusion of 15 millilitres of sugar with every 250 ml of flour will make for a more pronounced

taste and a crispier crust. Fresh or powdered eggs, one-half to one egg for every 250 ml of flour, will add thickness and richness. Substitution of milk for water, or the addition of powdered milk, will improve both flavour and characteristic golden brown.

Addition of a shortening, usually from 15 - 45 ml per 250 ml of flour, will increase tenderness. This is especially desirable in winter weather when even larger proportions of fat are sometimes necessary to keep the breadstuff from freezing hard on frosty trails. Solids like butter, margarine, bacon drippings, and lard are most effective when either creamed with the sugar or thoroughly mixed with the flour. Liquids such as cooking and salad oils, which make for a more crumbly but not so tender product, may be mixed with water, milk, and any fresh eggs.

Such fruits as raisins, currants, and blueberries make bannock tastier, although their inclusion calls for the use of a bit more baking powder. Combine these fruits with the dry ingredients to avoid any overmixing. Spices, particularly nutmeg and cinnamon, are unusually zesty when their odors mingle with the keenness of pine trees and wood smoke.

SOURDOUGH STARTER

The starter can be readied at home. Once you have it, you have commenced growing your own yeast. That's what you are actually using when you bake with sourdough. Here's the sure, simple way to begin.

500 ml flour
500 ml lukewarm water
1 yeast cake or package of dry yeast

Mix the flour, lukewarm water, and yeast thoroughly. Then set overnight away from drafts in a warm place. By the next morning, the mixture should be putting forth bubbles and a pleasant yeasty odor. This over-all process needn't stop for as long as you're going to be in the wilderness.

For best results, keep the starter in a well washed and scalded glass or pottery container. Never leave any metal in contact with it. Keep the starter, as much as possible, in a cool spot. As a matter of fact, if you want to store the starter or part of it for a period of months, just freeze it.

The sourdough starter can also be kept fresh and clean by drying. If you want to carry it easily and safely, work in enough flour to soildify the sponge into a dry wad. A good place to pack this is in the flour itself. Water and warmth will later reactivate the yeast plants for you.

Starters occasionally lose their vigor, particularly in cold weather. Oldtimers sometimes revived them with 15 ml of unpasteurized cider vinegar. This puts new acetic acid bacteria on the job. Fifteen to thirty millilitres of raw sour milk or cream, unpasteurized buttermilk, cultured buttermilk, or cultured sour cream will get the lactic acids functioning again.

Sourdough starters should never be stored in a warm place for very long. Heat encourages organisms harmful to yeast to grow at an extremely rapid rate. These may soon gain sufficient control to produce putrefactive changes; the reason for some of the unpleasant smells one occasionally runs across in old starters. Another result is that the starter becomes progressively weaker in dough-fermenting ability.

The sometimes necessary solution? Begin a new starter. This is a practical reason for including some spare yeast in the camping outfit. Best to take recently dated, packaged dry yeast. Stored where reasonably cool, this will keep several months or more.

A sourdough starter is best kept going by the addition of flour and water only. The starter, unless temporarily frozen or dried, should be fed about once a week at least. If you are regularly cooking with the starter, this process will take care of itself.

Sourdough Bread

If commencing from the beginning, set your starting sponge as already directed. The commercial yeast is used only to get the starter going. From then on, the mixture will grow its own yeast. When doubling a recipe, by the way, you needn't double the starter.

To your starter, add enough flour and lukewarm water in equal volumes to make about 750 ml of sponge. Let this stand in a warm location overnight or from 6 to 8 hours, whereupon it should be bubbling and giving off an agreeable yeasty odour.

From here on, the general procedure remains the same. Take out, in this instance, 500 ml of sponge. Place the remainder aside. That's your next starter. No matter what the recipe, at this stage always keep out about 250 ml of basic sourdough.

To the 500 ml of sponge add the following:

1 l flour
30 ml sugar
5 ml salt
30 ml shortening

Mix the flour, sugar, and salt. Make a depression in the center of these dry ingredients. Melt the shortening if it is not already liquid. Blend it and the sponge in the hollow. Then mix everything together. A soft dough should result. If necessary add either flour or fluid. The latter may be water or milk. Knead for three to four minutes on any clean, floured surface.

Too much pushing and pressing lets the gas escape that is needed to raise the bread. Just bang the dough together in a hurry, cut off loaves to fit your greased pans, and put them in a warm place to raise.

The dough, once it has plumped out to double size, should be baked some 50 to 60 minutes in a moderately hot oven or reflector baker that preferably, is hottest the first 15 minutes. Baking should redouble the size of the loaves. Wait until loaves seem crisply brown, then jab in a straw. If the bread is done, the straw will come out dry and at least as clean as it was when inserted.

Sourdough bread is substantial in comparison with the usual airfilled bakery loaf. It keeps moist for a satisfactorily long time. When the bread is made according to the preceeding suggestions, the flavour is unusually excellent, being especially nutty when slices are toasted. If your crew likes a real tasty crust, bake the bread in long slim loaves to capitalize on this outstanding characteristic.

Sourdough Muffins

Set the sponge the evening before as for flapjacks. The next morning take out the original starter and handle as usual. To the remaining sourdough add:

375 ml whole wheat flour
5 ml salt
7 ml baking soda
125 ml liquid shortening
125 ml sugar
75 ml skim milk powder
250 ml raisins
2 eggs

Mix flour, sugar, salt, powdered milk, and soda. Add either the raisins or perhaps blueberries or some similar wild fruit.

Make a cavity in the center of these blended ingredients. Mix the egg and the liquid shortening in this depression. Then stir only just enough to moisten everything.

Pour into ungreased muffin tins and bake in a hot oven or reflector baker for 20 minutes or until done. If the muffins are ready before the rest of the meal, loosen and tilt them in the pan so that air can circulate around them, and leave them near the heat where they'll stay warm.

Sourdough French Bread

The nutty, toasty crustiness of this bread really goes well with the substantial fare on which hearty outdoor appetites thrive. To make two loaves you'll need:

250 ml water
1 l flour
30 ml sugar
375 ml sourdough starter
125 ml milk
10 ml salt
25 ml shortening

Bring water to a boil and mix with milk. Cool to lukewarm. Mix the flour with the salt and sugar in a large container. Make a bowl-like depression in the center.

Mix the lukewarm liquid with the sourdough starter in this well. Blend with the dry ingredients until you get a soft dough, but do not knead.

Cover and move to a warm place to rise until about double in bulk. This should take some two hours. Then turn out on a lightly floured mixing surface. This may be an easily carried sheet of plastic.

Roll half the dough into a large rectangle. Fold the two long sides toward the middle. Then roll together like a jelly roll. Do the same with the other half of the dough.

Sprinkle 30 ml of corn meal lightly over the nearest thing you can come by in the way of a large ungreased baking sheet. Aluminum foil can be used. So can two large frypans. Place the loaves with their smoother side up. With a sharp knife make diagonal slits every couple of centimetres across the top of each loaf.

Now for the crust:

5 ml cornstarch
5 ml cold water
125 ml boiling water

Mix the cornstarch and cold water. Pour into the boiling water in a pan. Bring to a brief boil. Allow to cool. Then brush the loaves with it.

Now cover the loaves and place in a warm spot to double once more in bulk, which will usually take about another hour. Afterwards, brush the loaves a second time with the cornstarch mixture.

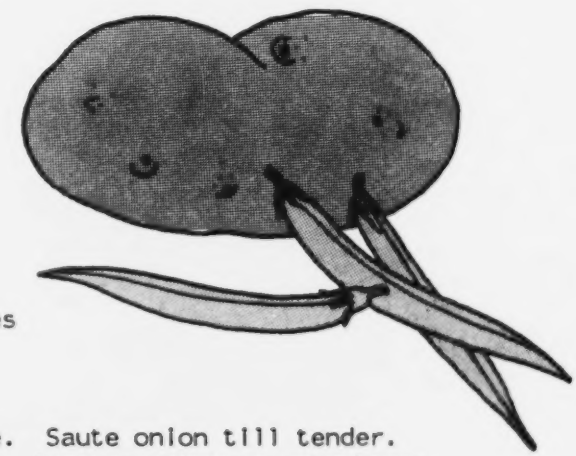
Commence baking in a hot oven or reflector baker for 15 minutes to set the crust. Then brush the loaves a third and final time with the cornstarch preparation. Reduce the heat to moderate and continue baking 30 minutes or until the bread is done and golden brown. Baking the bread longer, with less heat, will make for even thicker crust. The dutch oven really does a good job with this bread.

CORN PONES

Mix 500 ml corn meal, 5 ml salt, and 15 ml shortening. Add enough milk, about 250 ml to make a stiff dough. Shape into thin ovals. Bake in a hot oven or reflector baker for a half hour or until rich brown.

VEGETABLES

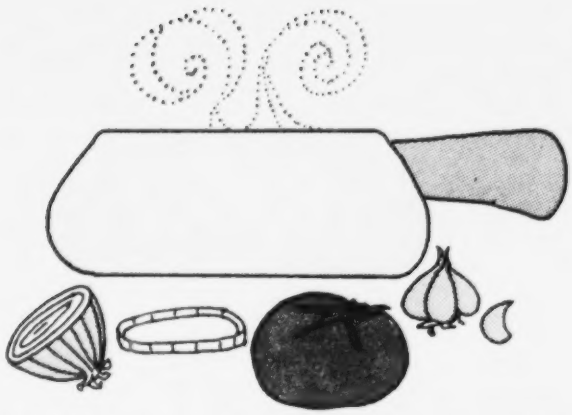
GREEN BEANS AND POTATOES (serves four)



Ingredients:
10 ml butter or margarine
1 medium onion, finely chopped
0.5 kg green beans, in 2 cm pieces
250 ml chicken broth
2 ml salt
0.5 kg potatoes, pared and cut into 5 mm slices
1 Thyme leaf, crushed

Method:
Melt butter in large saucepan on barbecue. Saute onion till tender. Stir in beans to coat well with onion mixture. Arrange potatoes over beans. Pour over chicken broth; sprinkle with salt and thyme. Heat to boiling. Cover, simmer 15 minutes or until vegetables are tender.

BROWN BEANS WITH ONION



Ingredients:

1	can brown beans
2	slices bacon, diced
½	onion, chopped
1	garlic clove, crushed
375 ml	tomato sauce
5 ml	Worcestershire sauce
1 ml	dry prepared mustard

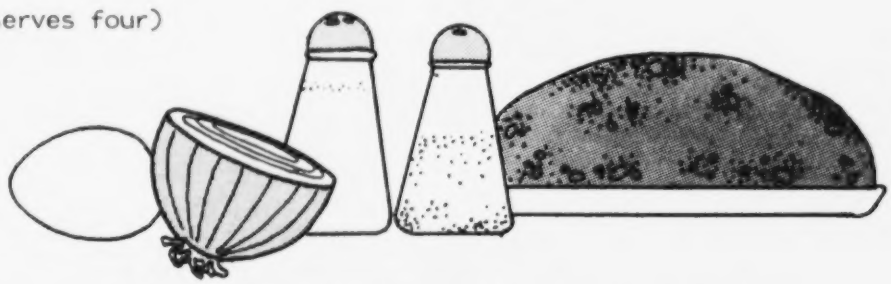
Method:

Saute the onion and garlic with the bacon. When the bacon is crisp, discard the garlic add other ingredients and heat.

Variation: Fry a sliced onion in bacon fat until the onion is transparent. Pour off excess fat and add the beans and a little molasses.

MEATS

BASIC HAMBURGER MIX (serves four)



Ingredients:

0.5 kg	ground meat
1	egg
2 ml	salt
	dash pepper
½	onion

Method:

Mix ingredients thoroughly. Meat can be shaped and cooked in a variety of ways:

-- on a stick in foil,
-- in a reflector oven or skillet,
-- stuffed in an onion, cabbage leaf, or zucchini and cooked in foil.

Use this basic mix on the following variations of the same recipe:

1. Lemon Hamburgers (serves four)

Ingredients

0.5 kg	basic hamburger mix
5 ml	freshly grated lemon peel
30 ml	freshly squeezed lemon juice

Method

Mix ingredients together, blending thoroughly. Shape into patties. Place on a greased skillet, seal quickly on both sides. Cook until done.

2. Campfire Stew (serves four)

Ingredients:
0.5 kg basic hamburger mix
30 ml flour
15 ml oil or margarine
1 can concentrated vegetable soup
water

Method:
Shape the hamburger mix into bite size balls - if they are small they will cook faster. Roll these balls in flour. Melt the fat in a hot skillet and add the meat balls. Brown one side, turn and brown the other side. Pour one can of vegetable soup over the meat balls. Add enough water to prevent sticking. Cover with foil and cook slowly until done.

3. Skillet Dinner (serves four)

Ingredients:
45 ml bacon fat or oil
0.5.kg basic hamburger mix
1 green pepper, chopped
1 can red kidney beans
1 can whole kernel corn (drained)
5 ml garlic salt

Method:
Melt fat in pan. Break ground beef into small pieces and brown slowly in hot fat. Pour off fat and add remaining ingredients. Simmer until tender, approximately 10 minutes.

4. Hamburger Stroganoff with Noodles (serves four)

Ingredients:
500 ml uncooked egg noodles
5 ml salt
few drops oil
0.5 kg basic hamburger mix
1 can cream of mushroom soup
½ can milk
pepper

Method:
Boil water and add salt, oil, and noodles. Simmer for 20 to 30 minutes. Brown the hamburger until lightly browned. Pour off excess fat. Add soup, milk, and pepper. Simmer for 15 minutes. Serve over noodles.

Variations: Add sour cream, parsley, Worcestershire sauce, and mushrooms.

BEEF JERKY (make this at home and pack for the trail - serves four)

Ingredients:
0.75 kg beef flank steak or other lean cut
125 ml soy sauce
2.5 ml garlic salt
1 ml lemon pepper
seasoning

Method:

Trim off all visible fat from beef. Cut lengthwise with grain into long thin strips no more than six millimetres thick. Combine soy sauce and seasonings. Pour over beef strips and toss until well-coated. Arrange meat strips (do not overlap) on cake-cooling racks, and place racks on baking sheets to catch drips. Bake in (90°C) oven for 8 to 10 hours. Meat will be very dark brown when done. Store cooled jerky in a plastic bag at room temperature.

SUPER SCRAMBLE (serves four)

Ingredients:

- 50 ml salad oil
- 0.5 kg package of smoked sausage, sliced
- 154 g package hash browned potatoes
- 30 ml green and red pepper flakes (optional)
- 10 ml onions, chopped
- 5 ml salt
- 425 ml water
- 4 eggs

Method:

Heat oil over camper stove in largest skillet. Add sausage, potatoes, peppers and salt, stir until coated. Add water and cook uncovered over medium heat until liquid is absorbed and bottom is golden brown; turn potatoes. Make four wells in browned potatoes and slip one egg into each of the wells. Cook until eggs are done to your satisfaction.

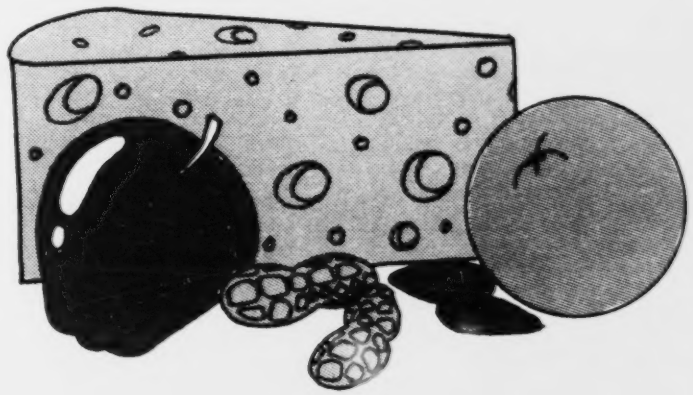
SNACKS

TRAIL MIX (serves four)

- 250 ml dry-roasted peanuts
- 250 ml raisins
- 250 ml soybean nuts
- 250 ml dates, coarsely chopped
- 250 ml whole blanched almonds
- 250 ml diced low fat cheese

GORP OR MOUNTAIN MIX

- 1 pkg. sugared cereal
- 500 ml M & M's or Smarties
- 500 ml raisins
- 500 ml nuts



ENERGY COOKIES (makes two dozen)

Make these at home for your snacks while hiking.

Ingredients:

100 ml softened margarine	50 ml wheat germ
125 ml peanut butter	125 ml milk powder
250 ml packed brown sugar	5 ml salt
1 egg	1 ml baking powder
5 ml vanilla	50 ml milk
200 ml whole wheat flour	250 ml rolled oats
250 ml chopped pitted prunes	125 ml coconut
15 ml sesame seeds	

Method:

In a large bowl beat together: butter, peanut butter, brown sugar, egg and vanilla. In another bowl combine: whole wheat flour, wheat germ, milk powder, salt, and baking powder. Mix well, then stir into butter mixture. Add liquid milk, oats, prunes, and coconut. Mix well. For each cookie, place a heaping mound of batter on a greased baking sheet and spread into an eight centimetre circle. Space the cookies about two centimetres apart. Sprinkle with sesame seeds. Bake at 190°C for 12 minutes until lightly browned.

BEVERAGES

HOT DRINKS

Boiled Coffee

Put 30 ml coarse grind coffee per 250 ml cold water into a kettle and set over the fire. Watch it carefully to prevent boiling over. Once boiled set it aside for five minutes to steep.

Instant Coffee

Great for backpacking because it is so light and no coffee pot is required. Sixty grams of instant coffee will make about 30 servings.

Tea

It is light weight and a good choice for backpacking. Take cream substitute and sugar if desired.

Russian Tea

250 ml orange flavoured instant drink mix
125 ml instant tea
1 ml cloves
2 ml cinnamon

Mix all ingredients together in large plastic bag, seal tightly. Wrap in another plastic bag, seal tightly. Label. For one serving, use 10 ml per 250 ml of boiling or cold water.

Bouillion, Instant Soups

Suitable for a quick lunch, just add boiling water and let steep.

Hot Gelatin Drinks

Choose those gelatin powders with Vitamin C added; orange and lemon flavours are most popular. Eight grams of gelatin powder is required for each 25 ml serving.

Cocoa

Make up a mix as follows, then just add hot water for a nourishing high calorie drink:

Combine:
1 8-litre box powdered milk
500 grams powdered cream substitute
1 500-gram box instant chocolate
500 ml powdered sugar

To make one serving:
45 ml mix
250 ml hot water

Wild Green Soup

To go with 500 ml of chopped or scissored young mustard greens -- or one of the other spicier greens such as dandelions, watercress, or young wild radish tops if mustard isn't at hand. Start slowly by heating a litre of milk; do not allow it to boil.

Meanwhile, melt 30 ml of butter, margarine, bacon drippings, or any other edible fat in a saucepan over low heat. Gradually stir in 8 ml salt, dash of pepper, and 30 ml flour. Add a finely minced small onion. Then pour in the hot milk bit by bit. Cook gently for five minutes. Drop in the greens and stir occasionally, continue to heat just below the boiling point until these are just tender. Sprinkle with paprika if you have any. Serve at once.

COLD DRINKS

High Protein Drink (serves four)

1 litre instant dry milk powder
2 packages vanilla flavoured instant breakfast
90 gram package soft drink mix or juice crystals
950 ml water

Combine dry ingredients in a large plastic bag and tie tightly. To serve, mix dry ingredients with cold water. Shake until dissolved.

Hint: Mixes are best when no refrigeration is available. Powdered milk and juices are best if weight is a consideration. Otherwise canned products are suitable.

If using powdered mixes, you will need to be sure that a safe supply of water is available. If unsure, purify it by adding a suitable chemical such as a few drops of chlorine bleach per four litres or two tablets of Halazone or Globaline per litre. Allow to stand 30 minutes before using.

Pleasant Pickups:

For throughout the day's hike, these can be made in a jiffy -- Mix 5 ml of your favorite instant coffee with an equal amount of sugar -- roll securely in foil. Dissolved in mouth, each will provide the same stimulation and energy as 250 ml of coffee.

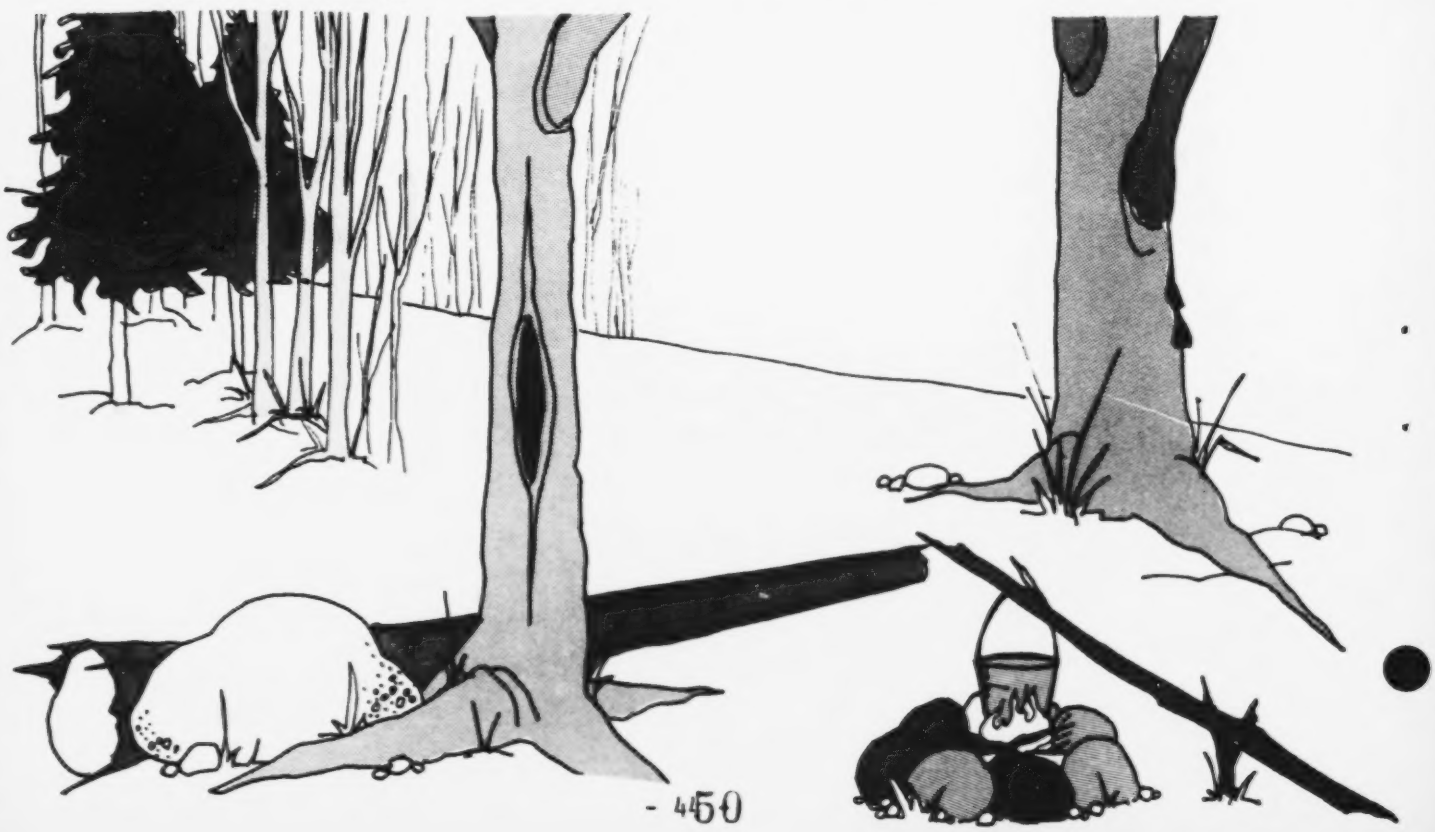
Mountain Ash Berry Lemonade:

Wash the stark red berries of the mountain ash, crush them in water, add sugar to taste. This process gives a drink like lemonade.

EMERGENCY FOOD

The inner bark of the familiar birches is a historically important emergency food. You can eat it as is. The flavour, although sweetish, is also neutral enough to warrant it being added in chunks and strips to soups and stews. It retains its romantic spiciness even when dried for easier packing. Be sure not to kill the tree!

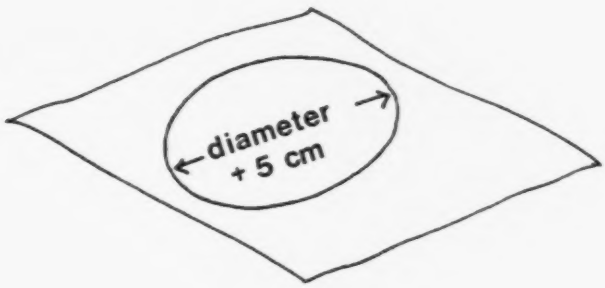
Also lodgepole and other pines have an inner bark that is edible both raw and cooked, as is the poplar's sweetish sap layer between the wood and bitter outer bark.



MAKE YOUR OWN CARRYING CASES

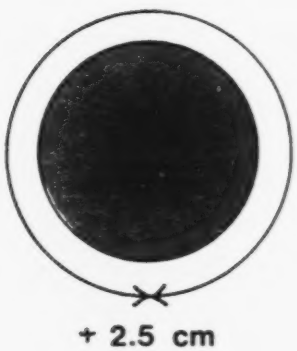
A POT BAG

CUTTING THE PATTERN



1. Measure pot at widest point and add five centimetres.

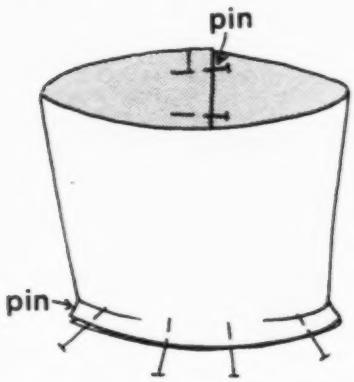
2. Measure and cut circle pattern from a newspaper.



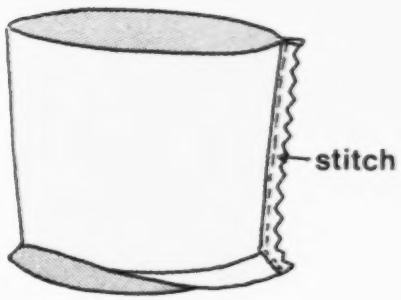
3. To make rectangle, measure around the perimeter of pattern circle and add 2.5 centimetres. This is the length of the rectangle.

4. Measure height of cook set with lid on plus half the diameter of the circle pattern plus five centimetres. This is the height of the rectangle. Cut the rectangle from newspaper.

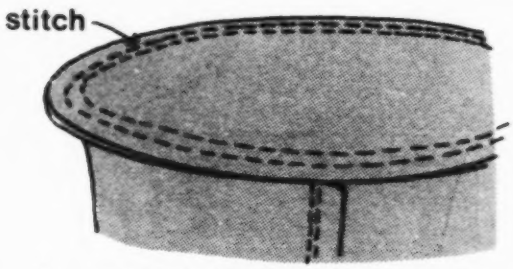
SEWING THE POT BAG



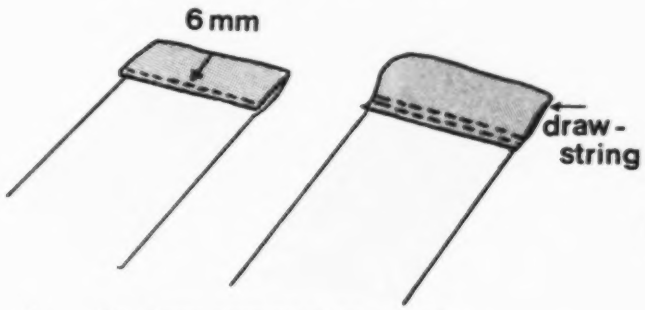
1. With right sides together, pin the long edge of the rectangle to the bottom circle. Adjust the rectangle to fit bottom. Allow 12 millimetres for bottom seam.



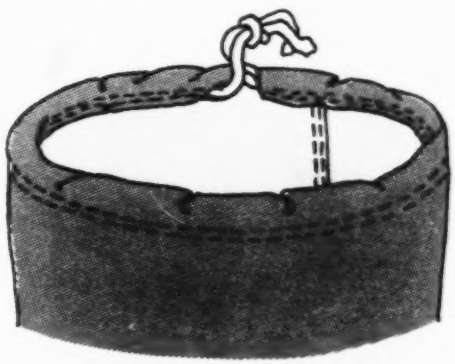
2. Stitch side seam from top to bottom. Stitch again six millimetres from first seam. Trim with pinking shears.



3. Stitch bottom to rectangle - stitch twice.



4. To form drawstring tunnel,
a) Roll and stitch a six millimetre edge around top of bag.
B) Roll and stitch another seam two centimetres from top.
Leave 2.5 centimetres for drawstring.

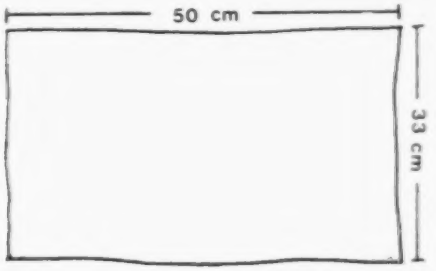


5. Cut a length of nylon cord. Burn ends with flame. Run the cord through tunnel. Install a drawstring clamp or tie the ends together.

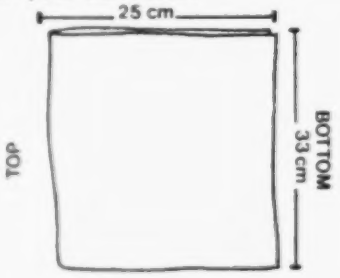
6. Finished bag looks like this.

MAKING A FOOD BAG

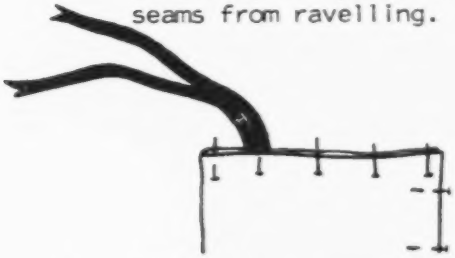
If you plan your hiking menu carefully, then you may want to bag each meal separately. A sturdy food bag such as this can be helpful for that purpose. Just about any type of material will do well enough, but coated (waterproof) nylon is the best you can use.



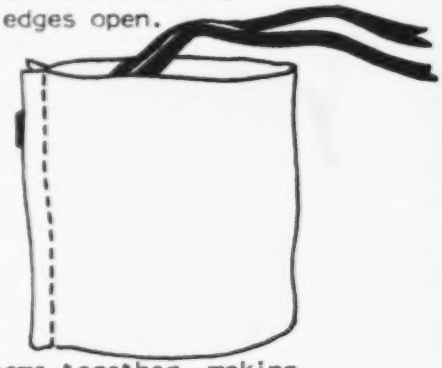
1. Cut a rectangle 50 x 33 centmeters. If you are using coated nylon stitch coated side in. Nylon may be hot cut with a soldering iron, this will prevent seams from ravelling.



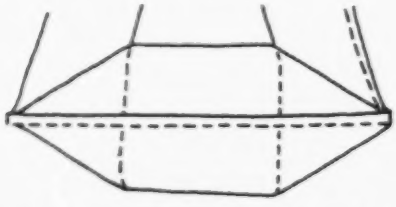
2. Fold in half. Pin the 33-centimetre edge together. Leave the 25-centimetre edges open.



3. Cut a 50-centimetre length of twill tape. Fold it in half and pin on the side seam about eight centimetres from the top of the bag. Stitch the pinned edge together about six millimetres from the edge. Stitch several times over the place where the tie is caught in the seam. Turn bag right side out.



4. Sew side seams together, making sure twill tape is free. Turn bag with seams to the inside.



5. To make box bottom fold the bottom seam against the side seam and stitch across the corner.

6. Turn the bag right side out. The bag will sit upright and open. These bags may be machine washed on a warm cycle and drip dried.

TOOL OR TABLEWARE ROLL

Material -- light duck canvas or any tough, pliable fabric.

Cut rectangle of fabric, adjusting size to intended contents.

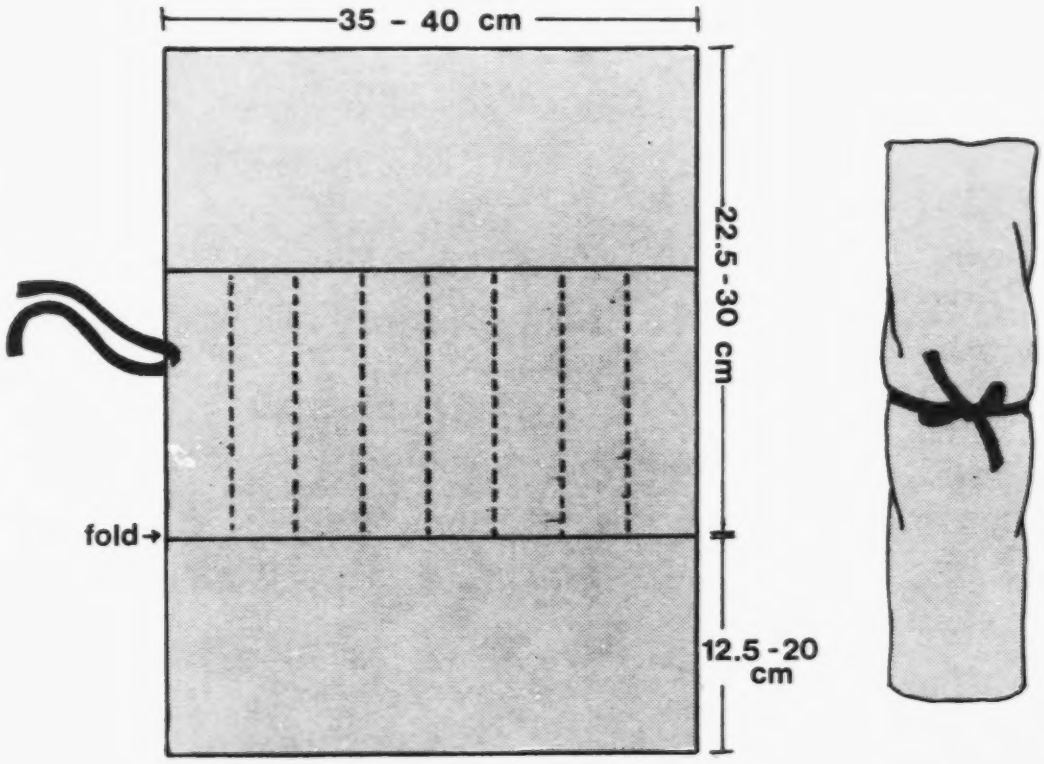
Hem all four sides.

Fold up bottom 12.5 - 20 centimetres, then stitch sides together.

Stitch in pockets as shown by dotted lines. Vary widths to suit contents.

Attach tie tapes of appropriate length.

Use this to store your utensils and tools for camping.



RECORDS AND RECORD KEEPING

PURPOSE OF RECORD KEEPING

1. record of information
2. record of work done
3. learning how to keep records
4. record of club activities
5. record of achievement

WHAT IS A GOOD RECORD BOOK?

1. COMPLETENESS - If any part of a record book is not finished, it detracts from the rest.

2. PICTURES AND ILLUSTRATIONS - Add originality and interest to the records. At the Achievement or Visitors' Day you should have a picture of your wildlife observations and outdoor activities and of the project members and leaders in your record book.

3. NEWS SECTION - This should include a record of 4-H activities at local, provincial, national and international levels. 4-H News should be collected throughout the year. When an item is clipped from the paper, the date and name of paper should be written onto the clipping.

4. NEATNESS - Neatness is important in completing your record book. However, it is understood that the record book is completed throughout the entire year and not just the day before Achievement or Visitors' Day.

4-H OUTDOORSMAN RECORD BOOK

MEMBER'S NAME _____

ADDRESS _____

AGE _____ BIRTHDATE _____

NAME OF PARENT OR GUARDIAN _____

NAME OF CLUB _____

NAME OF CLUB LEADER _____

NAME OF PROJECT LEADER _____

NO. OF YEARS IN 4-H _____ NO. OF YEARS IN PROJECT _____

ACHIEVEMENT DAY PROJECTS AND ACTIVITIES IN THE OUTDOORS

Cook and serve a meal outdoors. Complete an evaluation sheet.

EVALUATION SHEET:

I cooked _____ for _____ people
(which meal?) (number)

The menu I served included:

_____

_____ _____

_____

_____

_____

_____

I used the following cooking methods (describe the type of fire and equipment used).

_____

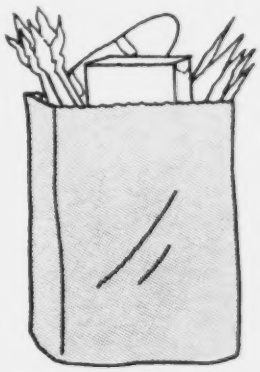
_____

_____

_____

_____

Explain how you made any equipment you used for this project. Include a drawing or photograph if you wish.



Cost of the food and supplies you used to cook this meal $_____

INGREDIENTS USED:	AMOUNT USED:	TOTAL COST
		$
TOTAL COST OF FOOD:		$
NON-FOOD ITEMS USED:		$
TOTAL COST OF NON-FOOD ITEMS:		$
TOTAL COST OF MEAL:		$

Draw a map of the area you were in when you cooked this meal. Use symbols to show those natural features of the area that were helpful to you, (e.g., close to water, lots of firewood, and cleared areas).

How did you use the environment to help you with your project?

_____

_____

_____

Describe how you cleaned your campsite. How did you dispose of your garbage? What effects did you have on the environment?

_____

_____

_____

Rate the overall success of your outing. What did you learn? What changes would you make the next time you cooked this meal outdoors? What was the most enjoyable part of your cook-out?

_____

_____

_____

_____

SPECIAL ACTIVITIES PARTICIPATED IN

Field Days, Rallies, Fairs, etc.

Date	Kind of Activity	I Took Part By:

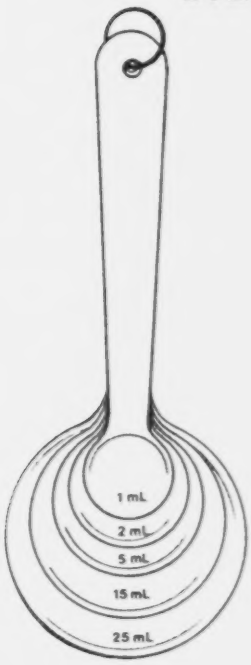
RECORD OF PROJECT MEETINGS

Project Meeting Date	Material covered about project	I put this knowledge to use by:

METRIC INFORMATION

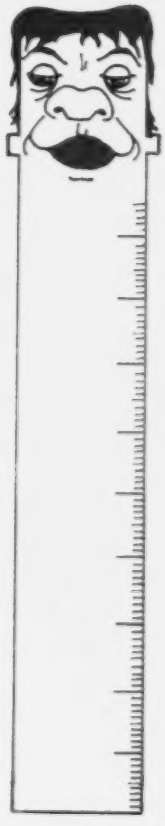
Approximate Conversion to
Metric Measures

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL	BASE UNIT
		MASS (weight)			
oz.	ounces	28.349	grams	g	
lb.	pounds	0.454	kilograms	kg	
ton	short tons (2000 lbs)	0.907	tonnes	t	gram
g	grams	0.035	ounces	oz.	
t	tonnes (1000 kg)	1.102	short tons	ton	
		VOLUME			
tsp.	teaspoons	5	millilitres	mL	
tbsp	tablespoons	15	millilitres	mL	
fl.oz.	fluid ounces	28.413	millilitres	mL	
pt.	pints	0.568	litres	L	
qt.	quarts	1.137	litres	L	
gal.	gallons	4.546	litres	L	litres
bu.	bushels	36.370	litres	L	
mL	millilitres	0.035	fluid ounces	fl.oz.	
L	litres	1.760	pints	pt.	
L	litres	0.880	quarts	qt.	
L	litres	0.220	gallons	gal.	
L	litres	0.027	bushels	bu.	
		LENGTH			
in.	inches	2.540	centimetres	cm	
ft.	feet	0.305	metres	m	
yd.	yards	0.914	metres	m	
mi.	miles	1.609	kilometres	km	metre
mm	milimetres	0.0394	inches	in.	
cm	centimetres	0.394	inches	in.	
m	metres	3.281	feet	ft.	
m	metres	1.094	yards	yd.	
km	kilometres	0.621	miles	mi.	
		ENERGY			
kcal	kilocalorie	4.186	kilojoules	kJ	joule
kJ	kilojoules	0.239	kilocaleries	kcal	

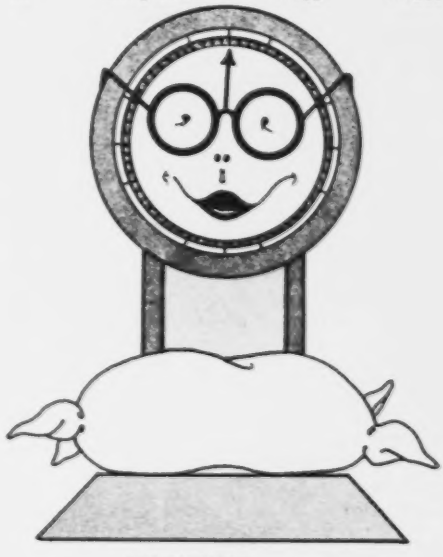


METRIC MEASURES ARE
AVAILABLE IN THESE SIZES

250 mL replaces 1 cup
500 mL replaces 2 cups



MUNSTER METRE
MEASURES LENGTH



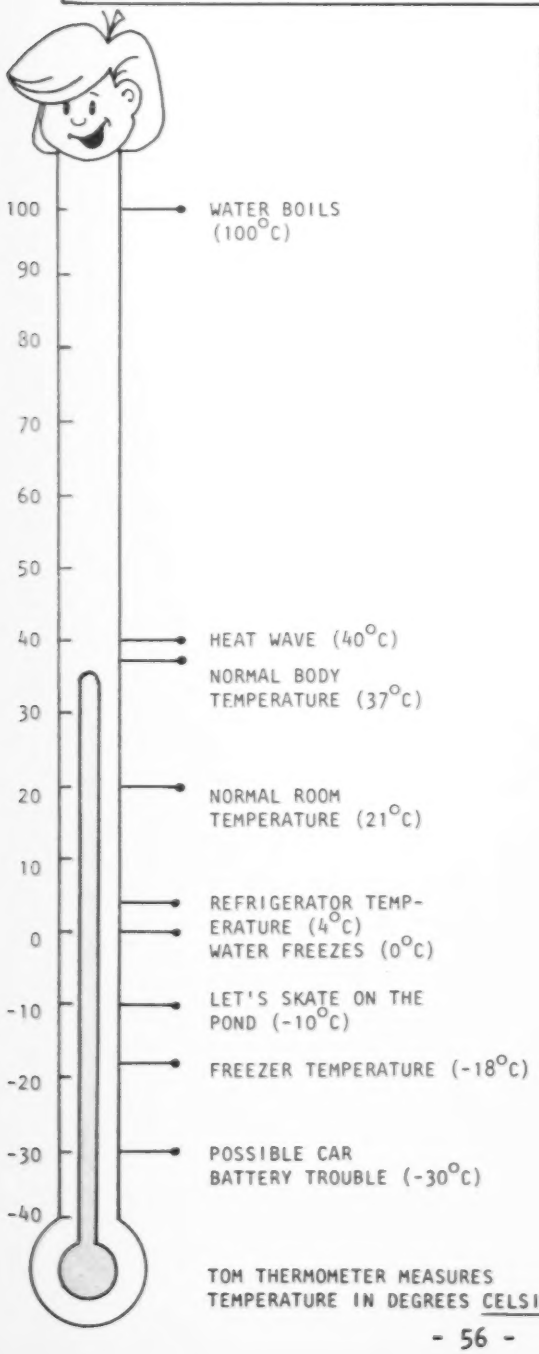
SAM KILOGRAM
MEASURES WEIGHT

LILY LITRE
MEASURES VOLUME

METRIC MULTIPLES AND PREFIXES TABLE

Multiplying Factor	Prefix	Symbol
$1{,}000{,}000 = 10^{6}$	mega (meg a)	M
$1{,}000 = 10^{3}$	kilo (kil o)	k
$100 = 10^{2}$	hecto (hek to)	h
$10 = 10^{1}$	deka (dek a)	da
(Base Unit) $1 = 10^{0}$		
$0.1 = 10^{-1}$	deci (des i)	d
$0.01 = 10^{-2}$	centi (sen ti)	c
$0.001 = 10^{-3}$	milli (mil i)	m
0.000,001	micro (mi kro)	μ

(These prefixes may be applied to all metric base units.
Example: Base Unit = litre
Add kilo to litre (symbol kL) = kilolitre. The multiplying factor is 1000. This means a kilolitre equals 1000 litres.)



TOM THERMOMETER MEASURES TEMPERATURE IN DEGREES CELSIUS (°C)

TEMPERATURE: °F = 9/5 + 32
°C = 5/9 - 32

OVEN TEMPERATURES:

	°C	°F
Very slow	120-135	250-275
Slow	150-165	300-325
Moderate	175-190	350-375
Hot	200-220	400-425
Very Hot	230-245	450-475
Near boil	245-290	475-500

ADDITIONAL METRIC INFORMATION

from:

Metric Branch
Alberta Government Services
12th Floor, Park Square
10001 Bellamy Hill
Edmonton, Alberta T5J 3C1

Metric Commission Canada
Box 4000
Ottawa, Ontario

Information Division
Canada Department of Agriculture
Ottawa, Ontario K1A 0C7

District Extension Office

OR

Publications Office
Alberta Agriculture
9718 - 107 Street
Edmonton, Alberta T5K 2C8

REFERENCES

Information Division,
Canada Department of Agriculture,
OTTAWA, Ontario.
K1A 0C7

"Let's Barbecue" pub. #1443, 1971

Nutrition and Food Marketing Section,
Alberta Agriculture,
7000 - 113 Street,
EDMONTON, Alberta
T6H 5T6

"Food Hints for Camping and Backpacking"

Tarre, Yvonne, Young, The Complete Outdoor Cookbook, Quadrangle, The New York Times Book Co., N.Y., N.Y., 10017, 1973.

Thomas, Dian, Roughing It Easy, Brigham Young University, Utah, 1975.

PROJECT EVALUATION

In order to keep meeting your needs in the 4-H program, we would like your assistance in completing this evaluation form. Make your suggestions on this sheet as you use this book. After the project has been completed, mail this form to:

Project Evaluation
4-H Branch
Alberta Agriculture
7000 - 113 Street
Edmonton, Alberta
T6H 5T6

(use another page if required)